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*The American
"Commercial Invasion"
of Europe*



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THE AMERICAN
"COMMERCIAL INVASION"
OF EUROPE

BY

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ASSISTANT SECRETARY OF THE UNITED STATES TREASURY



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THE AMERICAN
"COMMERCIAL INVASION"
OF EUROPE

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THE AMERICAN “COMMERCIAL INVASION” OF EUROPE

I

“ENGLAND has been hard hit by the Transvaal War, but is still the richest country in the world; France is without initiative, satisfied with returns on past achievements; Germany shows the greatest energy and initiative in Europe, but has travelled too fast; America has an unparalleled combination of natural resources and initiative, and will go on to greater achievements.”

This was a summing up of national qualifications in the world's industrial struggle, by the Russian Minister of Finance, M. de Witte.

I had asked M. de Witte to give his views of the relative positions of the great nations in the world-wide industrial contest. There is no man whose answer to such a question may be listened to with more interest. Sergius de Witte is a man of whom we have heard much, but from whom we have heard little. In the minds of many he is Europe's foremost statesman. He shapes the policies of Europe's mightiest empire. He watches with greatest care the varying financial currents, and is in the closest touch with commercial and industrial tendencies.

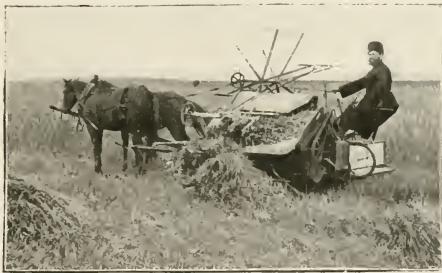
His Excellency was in his private office in the Finance Ministry in St. Petersburg seated at a great flat-topped desk, piled high with official problems, neatly sorted and tagged

ready for his examination. It was Sunday, but he had been hard at work all the morning. While I was with him I heard him make appointments as late as eleven o'clock that night. It is easy to see why he has gained the reputation for being the hardest worked man in Europe. Broad, strong, forceful, but with the repose and atmosphere of reserve power which mark most great men, his personality gave added interest to his reputation. He reached for a fresh cigarette, from a case he had been steadily depleting, and touched it to an odd electrical contrivance on his desk, which automatically lighted it. Then he leaned back reflectively and spoke with a freedom in refreshing contrast to the reserve of many lesser officials.

"England is still the richest country in the world," he said. "This Transvaal trouble has had marked effect on the finances of that country, and indirectly has affected the finances of every country in Europe. If Mr. Chamberlain will stop here, if he does not put the burden of any more such campaigns on England, she may be able to maintain her pre-eminent position. Should she have too many Chamberlains and too many Transvaal campaigns she might be ruined. But up to the present time English pre-eminence is not seriously shaken. The nation is still in the strongest financial position of all the great powers, and may reasonably expect to continue there. France is like a small *rentier*. She is contented with a modest income; contented to sit with her lap filled with securities, representing past achievements and present investments, and cut off the coupons. France is not looking for new industrial fields; she is building no new railroads; she is making no commercial conquests. France is satisfied now simply to sit down at home, contented to reap the small rewards that are naturally hers. While those rewards may seem small, however, they become in the aggregate great enough to place her in the forefront financially. Germany, in her natural resources, is poorer than England or France, but she is rich in initiative and energy. The German nation offers

the most striking example of initiative and energy that can be found in Europe. Industrially, she has made astonishing strides. But along many lines the progress has been unnatural and too rapid, and trouble may come of that.

“America is already one of the richest countries in the world; perhaps, in natural resources, quite the richest. There we find not only remarkable natural richness, but combined with that wealth the most pronounced initiative met with anywhere. With such a combination the country is bound to make the very greatest progress. It will go on and on, and will be greater and still greater. America is especially fortunate in



An American Binder on the Steppes of Russia.

that she has no great military burden. Militarism is the nightmare and the ruin of every European finance minister.

“The industrial crisis which you find here in Russia is not confined to this country. You will find it more or less pronounced all over Europe. Many enterprises have depended largely upon English capital. England’s Transvaal War has forced her to draw in her wealth, and that contraction has had a marked effect upon the industries of all Europe. People who were carrying on business with the aid, directly or indirectly, of English loans, have been forced to make other financial arrangements, and frequently have been compelled to curtail their operations. That reduction of credit and withdrawal of capital have acted and reacted until they have be-

come important factors in bringing about wide-spread industrial depression.

“England has not been alone, however, in expending large amounts of capital in military campaigns. The powers have all spent great sums in the last year in the military operations in China. The floating of loans in that connection has made demands upon capital that have further embarrassed industrial affairs. Here in Russia we have had, in addition to those unfavorable influences, other embarrassing conditions. The Government has been building less railroad than has been constructed at any time during the last ten years. As the Government is the chief customer for railroad supplies, depression has naturally followed in all industries depending upon railroad construction. Then there have been industrial enterprises organized here on a not too sound financial basis. But as we get farther away from some of these special causes of depression, I think the industrial crisis will end.”

There can be no doubt of the interest of M. de Witte in the subject he was discussing. Russia's need for capital is like Sahara's thirst for water. There is probably no man in Europe more anxious than he to see the whole earth smile under the blessings of peace, the particular blessings in which he is interested being a low rate of interest and a market hungry for bonds.

I met M. de Witte, as I met all the other finance ministers of Europe, on a tour which I made last year to obtain the European point of view regarding America's industrial expansion. The European view of the competitive positions which the great nations occupy in the struggle for international trade development is just now a matter of keen interest to the people of the United States. As an officer in the financial department of the Government, during the period of the most extraordinary development in the whole history of our foreign trade relations, I was especially interested in this subject. I wanted the point of view and conclusions of some of the men who were equally

interested observers, but who were looking at the development from without rather than from within. For four years I had seen at close range the growth of a favorable trade balance which had assumed a total in that brief period greater than had been the net trade balance from the founding of the Government up to that time. That was a phenomenon which had had



An American-equipped Electric Line which Passes the Pyramids of Egypt.

few parallels in our economic history, and the desire to study it from the European point of view led me to visit nearly all the countries of Europe. I was offered rather unusual facilities for obtaining the views of men most influential in political life and commercial affairs. The diplomatic representatives at Washington introduced me to the finance ministers of their home governments, and through the foreign treasury officers I was able to meet the heads of all the imperial and state banks;

through other channels, prominent bank officers and industrial leaders. It is my purpose to give some of the observations and deductions which resulted from this tour.

The subject I discussed with these distinguished foreigners is one regarding which our public has been pretty thoroughly enlightened in the last five years, and it is one of which the European public has heard almost as much in the English and Continental newspapers, but from quite an opposite point of view. When the amount of our sales to foreign countries passed the \$1,000,000,000 mark in 1897, we began to congratulate ourselves on the strides we were making in the markets of the world. The record was followed by steadily growing totals, until now we have, in a twelvemonth, sent to other nations commodities to the value of \$1,500,000,000. The meaning of that total is emphasized if we look back and find it compares with an average during the ten years ending 1896 of \$825,000,000.

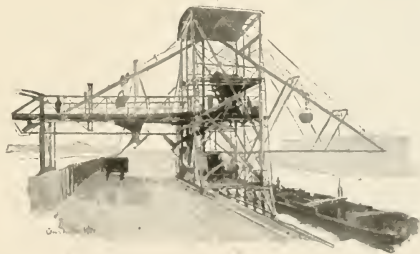
While our sales to foreign countries have grown so prodigiously, the other side of our financial account during these last five or six years has shown no proportionate increase. We have bought from the foreigners an average of only \$800,000,000 a year, and that total has shown little tendency to expand. It was this fact, this mighty development of our sales, while our purchases were, comparatively, on a declining scale, which piled up in half a dozen years a favorable trade balance so enormous as to startle the world. In the last six years we have sold in merchandise, produce, and manufactures \$2,000,000,000 more than we have bought; while in all our history, from the beginning of the Government up to six years ago, the foreign trade balance in our favor had aggregated a net total of only \$383,000,000.

The significance of these surprising totals was recognized on both sides of the Atlantic. An analysis of them brought out features more important than the vastness of the aggregate. Heretofore our sales had been made up almost wholly



Drawn from a photograph.

The span of the bridge for the automatic railways is 328 feet, and the bridge is movable for about one thousand feet on the wharf.



Drawn from a photograph

The capacity of each elevator is from forty to fifty tons per hour. The weight of each elevator, with its corresponding bridge, is about one hundred tons.

American Coal-handling Machinery (Elevators and Automatic Railways) in Germany

of foodstuffs and raw materials. Europe was the workshop. But that has changed, and we find, year after year, an astonishing increase in our exports of manufactured articles, an increase that in the last two or three years reached totals which gave ample basis for the popular talk of our invasion of the European industrial fields. Our exports of manufactured articles in the decade prior to 1897 averaged \$163,000,000 annually. In 1898 our sales of manufactured articles to foreign customers jumped to \$290,000,000, the next year to \$339,000,000, the next to \$434,000,000.

These figures, showing a steady invasion by our manufacturers of foreign industrial fields, have a natural corollary. As exports of manufactures increased, our imports of the handiwork of foreign shops showed an even more rapid decline. Our manufacturers were not only invading the foreigner's own markets, meeting him at his threshold with a new competition, but they were taking away from him his greatest market—the United

States. We have in the last half-dozen years been manufacturing for ourselves a vast amount of goods, such as we have been accustomed to buy abroad.

One can turn from a contemplation of these great totals to an examination of the records made in recent years by individual industries, and find in detail facts upon which to base a belief that the United States has acquired, or is acquiring, supremacy in the world's markets. So many industries have been sending rapidly increasing contributions to swell the rising



Drawn from a photograph.

An American Type-writer in Uganda.

tide of our foreign commerce that it is difficult to tell any detailed story of American commercial expansion without making it read

like a trade catalogue. The increase in our exports of manufactured articles can, in the main, be traced to advances made in the manufacture of iron and steel, and to the display of inventive talent in the making of machinery. The development of our



Drawn from a photograph.

An American Cash-register in Durban.

grasp on the world's markets for articles manufactured from iron and steel has been no surprise to those who early recognized the position of America in respect to the raw materials from which those articles are produced. America unquestionably possesses advantages, in respect to her iron ore and her coal mines, far superior to those of any other country, and, based solidly upon that superiority, has already become the greatest producer of iron and steel in the world.

American locomotives, running on American rails, now whistle past the Pyramids and across the long Siberian steppes. They carry the Hindoo pilgrims from all parts of their empire to the sacred waters of the Ganges. Three years ago there was but one American locomotive in the United Kingdom; to-day there is not a road of importance there on which trains are not being pulled by American engines. The American locomotive has successfully invaded France. The Manchurian Railway, which is the real beginning of oriental railway-building,

bought all its rails and rolling-stock in the United States. American bridges span rivers on every continent. American cranes are swinging over many foreign moles. Wherever there are extensive harvests there may be found American machinery to gather the grain. In every great market of the world tools can have no better recommendation than the mark "Made in America."

We have long held supremacy as a producer of cotton. We are now gaining supremacy as makers of cloth. American cottons are finding their way into the markets of every country. They can be found in Manchester, as well as on the shores of Africa and in the native shops of the Orient. Bread is baked in Palestine from flour made in Minneapolis. American windmills are working east of the Jordan and in the land of Bashan. Phonographs are making a conquest of all tongues. The Chrysanthemum banner of Japan floats from the palace of the Mikado on a flag-staff cut from a Washington forest, as does the banner of St. George from Windsor Castle. The American type-setting machines are used by foreign newspapers, and our cash-registers

keep accounts for scores of nations. America makes sewing-machines for the world. Our bicycles are standards of excellence everywhere. Our typewriters are winning their way wherever a written language is used. In all kinds of electrical appliances we have become the foremost producer. In many Eu-



Drawn from a photograph.

American-equipped Electric Cars in Cairo.

ropean cities American dynamos light streets and operate railways. Much of the machinery that is to electrify London tram lines is now being built in Pittsburg. The American shoe has captured the favor of all Europe, and the foreign makers

are hastening to import our machinery that they may compete with our makers. In the Far East, in the capital of Korea, the Hermit Nation, there was recently inaugurated, with noisy music and flying banners, an electric railway, built of American mate-



Drawn from a photograph.

American-equipped Electric Cars in Cairo.

rial, by a San Francisco engineer, and now it is operated by American motormen.

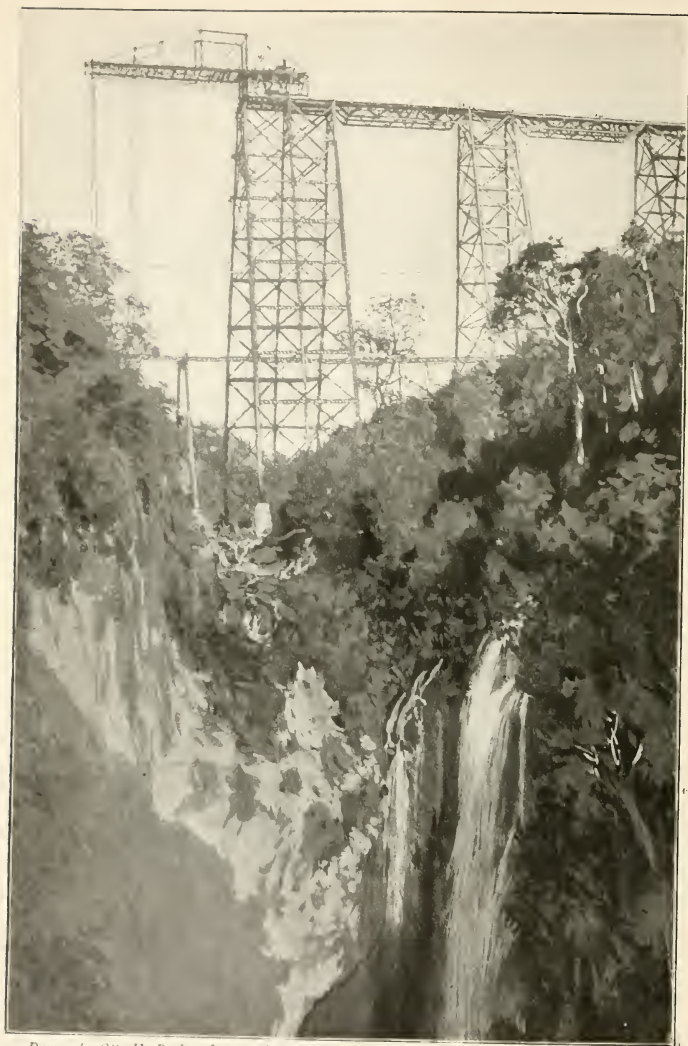
One might go on without end, telling in detail the story of American industrial growth and commercial expansion. In the list of our triumphs we would find that American exports have not been confined to specialties nor limited as to markets. We have been successfully meeting competition everywhere. America has sent coals to Newcastle, cotton to Manchester,

cutlery to Sheffield, potatoes to Ireland, champagnes to France, watches to Switzerland, and "Rhine wine" to Germany.

Our public has generally looked upon the development of our foreign trade as only one of the incidents in the remarkable period of prosperity which we have been enjoying, and has not, perhaps, clearly analyzed its full significance. The European, I found, had come nearer to a real understanding of the situation.

A distinguished Berlin economist outlined an idea which seemed to me interesting. "Two or three generations ago," he said, "there were families in America living a life of almost complete industrial independence. Not only was all the necessary food raised, but within the household there were spinning and weaving and the application of all necessary trades. The invention of machinery, the development of factory life, the specialization of industry, made such independence impossible. That which happened to the family a hundred years ago has happened now to the nation. Specialization has gone on, and concentration, combinations, and trusts have made it as impossible for the small manufacturer to compete with the great as it was for the hand-loom and the spinning-wheel to compete with the factory. The perfect and instant communication between distant parts of the world, the cheapening of transportation, the wider knowledge of every country, its products and its needs, have brought about an interdependence of nations that is now almost as great as the dependence of one class of industrial workers on another. This national dependence, this necessity of every country to more and more largely buy and sell in foreign markets, is forcing every nation, whether it wills or not, into participation in an international industrial struggle. That is the key-note of the new century. Whoever will forecast the future of nations can now make no more useful study than an examination of their comparative industrial equipment.

"History is becoming more and more the story of industrial development," he continued. "The strength of a nation



Drawn by Otto H. Bacher from a photograph.

AN AMERICAN BRIDGE IN BURMA IN THE COURSE OF CONSTRUCTION.

The Gotkeik Viaduct over the Chungzoune, Burma. The completed viaduct is 2,260 feet long, and at this point is 820 feet high. It was made in sections in America and shipped a distance of 15,000 miles.

skill and executive ability. Many of the same qualities which win great industrial battles are to-day potent in deciding the results of military campaigns. Commercialism in its highest sense has been the real object back of half the military movements of the last decade. It may all seem very sordid and unromantic, but I believe that a study of the comparative price-currents of nations, an analysis of trade balances, an understanding of the statistics of production and consumption, will give the *data* which are now needed in making a forecast of a nation's history.”

There are two phases to the significance of the American grasp of the world's markets. The obvious phase is the development of our own industries which must follow such a conquest. If our factories are to be great enough to supply our own wants and in addition turn out a surplus so large in volume and so low in price as to become one of the most important factors in the world's markets, we can count on an industrial growth of which we have heretofore hardly dreamed.

There is another phase to our conquest of foreign markets, however, and that is its effect upon the other nations of the world. If a much larger share of the world's manufacturing is to be done in America, it means a lesser share will be done elsewhere. The pictures which some enthusiastic observers of our foreign trade delight to draw, of a time when our exports have so increased and our imports so diminished, that we will not only make everything we want for ourselves, but a very large part of what the world wants besides, is a picture which offers neither a probable forecast nor a desirable result. Naturally we cannot go on selling to the world a great surplus of food products and manufactured articles without buying from the world in return. Statistics indicate that we have for the last two or three years been sending Europe annually something like \$600,000,000 more than we have been buying. Europe has not been paying for this in gold. During the six years in which we built up a surplus foreign trade balance of

\$2,744,000,000, we have received from the rest of the world a net balance in gold of only \$132,000,000.

One of the most unanswerable of financial conundrums is how the world has settled its debt to us in the past and is to settle it in the future. If these statistics of our foreign trade are to be depended upon, it would seem as if we had placed the world in our debt in the last six years to such an extent that we ought to be about ready to foreclose our lien. As a matter of fact international finances do not show that we have any unusual command in the world's money markets; our bankers have no extraordinary credits with their foreign correspondents. There seems to be no vast accumulation of funds upon which we can draw at will, nor is there other evidence that any large part of this balance is still unsettled.

The question of how a \$600,000,000 annual trade balance is to be settled has been a rather interesting puzzle to our financiers; to European finance ministers and bankers, to manufacturers and workmen, it is a subject of the most intense and immediate interest.

The answer as to how that trade balance has so far been settled requires a good deal of explanation which must be based on very unsatisfactory *data*. The prediction as to how it is to be settled in the future leads to most interesting speculation regarding financial conditions.

In the first place the problem is not so difficult as it looks on its face. While Government reports show that we have sold to Europe roundly \$600,000,000 a year more than we have bought, it may be certain that the total is considerably below those figures. I have been close enough to the making of Government customs statistics to know something of the difficulties. No fault can be found with the thoroughness of the work, but it is quite impossible to strike any accurate international trade balances when the figures on one side of the ledger must come from importers, who have the strongest motives for undervaluing imports in their statements. I would

hardly like to make a guess regarding the average percentage of undervaluation for all our imports, but it can, at the outset of the consideration of this problem, be set down as a very large amount. Then there are items of great importance of which our customs statistics can take no note. Our European tourists are generally supposed to spend \$100,000,000 a year. We pay for freights to the owners of foreign steamship lines perhaps \$75,000,000 more. There is a great stream made up of numberless small remittances, sent home by prosperous immigrants. And lastly, and most important of all, there has been going on a repurchase by American investors of our securities which have been held in foreign markets. This, in the aggregate for the last ten years, assumes enormous proportions. The best of statisticians can do nothing more than guess at the amount, but it has been great enough, in the main, to counterbalance the excess of our foreign sales over our purchases, after the totals of travellers' expenses, ocean freights, and the home contributions of immigrants have been deducted. This return of our securities cannot go on forever; indeed, there is pretty good reason to believe it cannot go on much longer, for the reason that there are now few American securities held in Europe to return.

It is the practice of the great banks of Europe, particularly of Germany, to take charge of the securities owned by a vast clientage of investors. When in the Imperial Reichsbank and in the Deutsche Bank in Berlin, I was taken into great vaults whose walls and floors were covered with cases like an immense library, containing stocks and bonds belonging to clients of the banks and held there for the collection of coupons and for safe-keeping. In each of the banks there were securities representing some 2,000,000,000 marks. It was interesting to be shown great cases of empty shelves which had formerly been set apart for American securities, and which now held only here and there scattered packages. This was the visible evidence of what an examination of investors' strong boxes would show in

all those European countries which have in years past found in America the most profitable field for investment.

If our foreign trade is to continue to hold the same relation between imports and exports that has been ruling for the last few years—if we are to go on selling Europe, say, \$600,000,000 a year more than we buy—there will be then, after liberal reductions for travellers' expenditures, ocean freights (an item which the development of American shipping may materially decrease), and immigrant remittances, a balance due us of



Type of Passenger Locomotive Used on an American Railroad—Weight Eighty-eight Tons (without tender).

\$300,000,000 or \$400,000,000 a year. How is that balance to be paid?

That question is, perhaps, the most interesting of any that can be propounded to-day in the field of international finance. I asked every finance minister of Europe and the head of every imperial bank for an answer to it. I found it a question over which they had pondered much and never with feelings of satisfaction. That Europe cannot pay such a balance in gold is obvious; that we would not desire to have it paid in that way is clear. The conclusion which I found nearly every important European financier had already reached, was that America will

sooner or later enter the European security markets; that the tables in international investments are to be completely turned; that we are to hear no more of the English or the German syndicate making investments in America, but rather of the American syndicate becoming a most important factor in the foreign investment field.

The low interest rates which for the most part have been ruling in America for several years, have everywhere attracted attention. The belief is growing that New York is to become the lowest money market in the world. There has been particular interest in the advances made in the market price of



Type of Passenger Locomotive Used on the Orient Express, Paris to Constantinople
—Weight about Fifty-eight Tons.

investment securities. The quotations which have been made for high-grade bonds have been the wonder of Europe. While market quotations have shown United States two per cent. bonds selling at 110, the three per cent. bonds of the Imperial German Empire were quoted at 88, English consols bearing two and three-quarters per cent. sold at 93, Russian four per cent. gold bonds at 96, and Italian Government issues at prices netting the investor over four per cent.

These comparisons are anything but pleasing to European treasury officials. They are quick to see, however, that such a comparison is not entirely fair. Our Government bonds are

free from taxes, and, even more important than that, they have a special use and value to national banks. A national bank may issue circulation against deposits of these bonds with the United States Treasury, or may receive public deposits if it puts up Government bonds as security, and so the market value of our Government issues, and particularly of our two per cent. bonds, cannot be taken as a measure of the investment return which capitalists are willing to take. It is a fact, however, that there are over \$500,000,000 of our Government bonds not held by national banks to secure circulation or as a basis for public deposits. Those \$500,000,000 are held solely for investment, and are maintained at market prices which net the investor less than one and three-quarters per cent., quotations which certainly put the credit of this Government far above that enjoyed by any other nation.

There are other evidences that the United States is becoming the best market in the world for the highest grade of industrial securities. First-class railroad bonds, as, for example, those of the Pennsylvania or New York Central, sell on a basis that nets the investor as low a rate as do English railroad bonds, while on the Continent the highest grade of corporate securities sell at prices to realize higher rates of interest to the investor than do our best securities.

That the United States gives promises of reaching a position of industrial supremacy in the world's trade, is acknowledged to-day the world over. Undoubtedly we have been too flamboyant in some of our claims. The industrial world as yet is by no means prostrate at our feet. We have before us a long campaign of hard work and intelligent prosecution of every advantage which we have, before we reach such a position of industrial supremacy as occasional newspaper writers on both sides of the Atlantic have given us credit for. That we have the foundation upon which to build such industrial supremacy, however, cannot be doubted by anyone who is familiar with the resources and abilities shown in our own in-

dustrial field, and makes intelligent comparison with the conditions that obtain abroad.

It ought clearly to be kept in mind that the road to the commercial domination of the world is not a clear one for us, and that as yet we are a long way from the end of it. Evidences of that will be found in studying current statistics of our manufactured exports. The rapid increase which has been going on for a number of years has halted, and for the last fiscal year reports show a decrease. That decrease can be accounted for by the fact that our shipments to Porto Rico, Hawaii, and the Philippines are no longer counted foreign exports, but it is, nevertheless, evident that a halt has come in the triumphant march of American manufactures toward European markets. An important reason for this is in the very force of the success we have made. There have been serious inroads made in the prosperity of many foreign manufactures by our successful competition. The depression has been reflected in lower wages and in decreased purchasing power, and a lower level of prices which has reacted on us in common with the foreign manufacturers.

In a good many directions we have much to learn in regard to a successful prosecution of foreign trade. The Germans could give us valuable lessons. They are strong in two particulars—strong in the line of technical education, though perhaps not superior to us, and strong in commercial training specially adapted to the needs of their representatives in foreign countries. In this last particular we are lamentably weak. We do not learn languages readily, and we have been too busy with our home affairs to cultivate what facility we have. It is a comparatively difficult thing to find trained business men, born in America, who speak fluently two or more Continental languages, and it follows from that difficulty that we send commercial representatives to Europe who are under the almost hopeless handicap of not speaking the language of a country in which they wish to do business. Were it not for the coming

universality of the English language, the handicap would be far greater than it is. Unfortunately the bad equipment of many of the commercial representatives who are sent abroad is not confined to their lack of knowledge of languages. Frequently they have but vague ideas of the commercial geography of



An American Steel Hopper-bottom Coal Car

Capacity 100,000 pounds.

Europe. They are not at all clear as to what particular sections are given over to this form of manufacturing or that field of production. More than half the failures that have come to manufacturers who have tried to extend their foreign business have resulted from the lack of qualifications in the representatives they sent abroad.

Another condition that is not favorable to our development is one that is being thought of a good deal more in Europe than at home. We no longer are occupying the leading position in scientific investigation having special commercial application. Many of the most notable discoveries of the last few years in commercial chemistry, electricity, and other fields of scientific work having direct relation with industry have been made by foreigners. The X-ray and the wireless telegraph are illustrations which would occur to everyone, but there have been numberless important discoveries of great value in industrial operations for which we are obliged to pay royalty to foreign inventors. The United States Government is to-day

paying a royalty to a German inventor for the use in the mints of a method of refining gold by electrolysis, a method which proved much cheaper than that which had been in common use in the Government and commercial refineries up to within a year or two ago. Many such illustrations could be given.

One of our particular points of strength has in it danger, when carried too far, of being an element of decided weakness. We have profited greatly by our genius for specialization, and our adoption of standard models of machines, which can be made in great quantities at extremely low cost. In holding closely to these standard designs, we have frequently lost sight of foreign prejudices. Small concessions to those prejudices might have meant large sales, but our manufacturers have declined to make them. In Moscow, for instance, I talked with a merchant who had branches all through Siberia, and who bought large consignments of ploughs in America. The Russians do not harness their horses as we do, and our method of hitching a team to a plough is not adapted to their use. This merchant found it impossible, however, to get our plough manufacturers to adopt the slight changes which he suggested, even when his orders were for very large quantities, and he



A Type of Freight Car in Use on French Railroads.

had to have made in Germany the type of clevis which his customers demanded and attach it to his importations of American ploughs.

The most important of all obstacles that the development of our foreign trade is likely to encounter is the same one which has proved the most dangerous rock in the path of

English industry—the growth of a spirit in trades-unions which attempts to regulate the business of employers in other matters than those relating to wages and hours of labor. I believe the decline of English industry can be attributed to the success of labor organizations in restricting the amount of work a man may be permitted to do, more than to any other single cause. We have encountered that spirit too frequently in our own labor field, and it is one which, if successfully persisted in, will cut the ground of advantage from under our manufacturers quicker than anything else I know of.

It is generally understood that our natural resources are in many important particulars unparalleled. We patriotically believe that the ability of the average American workman is superior to that of his competitor in other countries. We are all confident that our form of government offers the solidest foundation upon which to build national prosperity. Our industries are helped rather than hampered by our system of federal taxation, while an examination of the incidence of taxation in nearly every country abroad shows that a most depressing influence on industries is exerted by the national tax-gatherers.

There are other facts in our favor not quite so generally understood. We have, for instance, a financial system, particularly in the relation of our banks to every-day business transactions, which gives us as much of an advantage over most of the Continental countries as would some great labor-saving machine. The American business man whose operations are even of the most modest extent is certain to have a bank account. He pays his bills with checks or drafts. When he wishes to extend his operations he does not borrow actual currency, but he borrows bank credit. In all his transactions he has to aid him the most fully developed credit system to be found anywhere in the world except in Great Britain.

It is almost beyond belief how little development there has

been in this direction in some of the foreign countries. A bank check is looked upon with suspicion in Italy. Practically no small tradesmen would take a check, and none of them keep a bank account. It was still more surprising to me to find that such a statement would be almost literally true of Paris itself. I was studying the mechanism of the Bank of



An American Oil Company's Godowns at Nagasaki, Japan.

France under the guidance of one of the officers. We went into one great room in the old building in which there were 200 desks enclosed in wire cages, all empty at the moment. I asked what these were for.

“These cages are for our city collectors,” I was told. “When a small merchant borrows from the Bank of France, he does not, as with you in America, borrow a bank credit and have his loan merely added to his balance on the books of the

bank. With us the merchant, when he makes a loan, gets the actual money and takes it away. He probably has no bank account with us. He writes no checks. When the loan is due he does not, as would be the case in your banks, come in and pay his indebtedness with a check; instead of that we send a collector to him, and that collector is repaid the loan in actual currency. Two hundred men start out from the Bank of France every morning to collect matured loans. Several days each month it is necessary to send out 400 men, and on the first and the fifteenth of each month 600 collectors go out."

These collectors were uniformed men carrying leather pouches in which they have the matured notes and which are later filled with currency as the collections are made from the bank's borrowers.

I stood at the paying-teller's desk as I went farther along in my tour of the Bank of France. As I halted there the man who happened to be at the window at the moment presented a check for 50,000 francs. The money was counted out and handed over to him, stored away in a big wallet, and he passed on. I asked if it were not unusual for a man to draw out so much currency, and was told that it was not. It was but another illustration of how undeveloped is the banking system of Continental Europe in its uses by the general public.

A story that was told me on the highest authority in Vienna sounds ludicrously incredible, but it is true. The Austrian Government bought a telephone line from an English company. There was a payment of 1,000,000 guildens (about \$400,000) to be made by the cabinet officer corresponding to our Secretary of the Interior. The representative of the English company wished to be paid by merely receiving a credit at the Austro-Hungarian State Bank. The minister regretted that there was no precedent for such a method and insisted on sending to the bank, which is the government's fiscal agent, bringing the actual money to his office, and counting it out to the Englishman, who in turn took it back to the same bank,

where it was again counted and put back in the vault from which it had been taken an hour before.

As one gets farther east the methods of banking become more primitive. The Russian peasant frequently becomes a man of very considerable property, but he is apt to cling to his early financial method of banking in his boots. He wears boots with high felt tops, and the leg of one is the receiving-teller's cage, and the top of the other is the paying-teller's. He will start out in the morning with his right boot-leg full of money. His day's payments are made out of that boot, and his receipts



American Binders on a Hungarian Estate.

are deposited in the other. At night he checks up on his day's financial operations and strikes a balance.

The banking methods of Continental Europe are cumbersome and time-consuming, and the people generally have learned but the first lessons in the uses of credit machinery. That forms a handicap upon industry that is just as real as that caused by their persistence in using out-of-date machines and methods of manufacture which we have long ago abandoned as slow-going and expensive.

One of the important factors in the strength of our industrial position is the unquestioned superiority in our transpor-

tation system. If one has fresh in mind the picture of our luxurious trains, mammoth engines, and, more important still, our standard fifty-ton freight cars, it makes the Europeans seem like amateurs in the science of transportation when we see their toy cars, small locomotives, and generally slow-going administration. If one looked into the matter with the eye of an expert, studying the unit of cost, the freight charges per ton per mile, or the mileage rate for passenger service, and made comparative statistics of the tonnage of freight-trains and the cost of moving them, he would discover a startling lack of efficiency, both in Great Britain and on the Continent. Perhaps it is not quite fair to make comparisons of the average cost of freight traffic per ton per mile in America and in Europe, because the average haul is much shorter there, and terminal expenses of a haul are practically the same whatever its length. The average charge per ton per mile on all American railroads for all classes of freight is now less than three-quarters of a cent. If we take the statistics of the Eastern trunk lines alone, that figure would be cut to about one-half cent per ton per mile. It compares with 2.4 in Great Britain, 2.2 in France, 1.6 in Germany, and 2.4 in Russia. One of the most remarkable illustrations of the failure of European managers of industries to keep pace with the times is to be found in a comparison of the efficiency of their railroads with ours. English railroads charge three times as much to move a ton of freight as it can be moved for in America. English railroad managers have failed to grasp the economies that are made possible by heavy traffic, by the use of engines of enormous capacity and freight-cars that will carry fifty tons. But if the English railroads have failed to keep pace with ours, what can be said of most of the Continental roads? Short trains with pygmy freight-cars, each car holding only eight tons, make clear to any layman the handicap which high transportation charges have laid on industry all over Europe.

In the little town of Abo, in Finland, I was waiting one

day for a steamer to go to Stockholm. In strolling about the town I ran across another American. I learned that he was the representative of a great engine manufactory, and that he had been covering Europe from Spain to Russia. He had been able to sell his engines in competition both with the



A Harvest Scene in the Highlands of Scotland.

An American binder in the field.

domestic manufacturers and with the makers in Great Britain and Germany, who had before practically controlled the trade. I asked him to analyze for me the conditions that enabled him to come into these markets and sell in successful competition in spite of custom duties, in spite of 4,000 or 5,000 miles of transportation charges, and in spite of the fact that his factory

paid workmen average wages two or three times as large as were paid by his competitors.

"Our success in coming into this field," he said, "is very largely due to what in our manufacturing parlance we call the making of 'standards.' We believe we know how to make a type of engine which will give the maximum efficiency for a certain class of work. We develop our standard type and then we stick to it. We are enabled to manufacture an enormous number of engines all exactly alike because we have in our home market an enormous field. The American public has been taught that a builder of engines knows better how to design an engine than does the individual who only occasionally buys one. Our best manufacturers absolutely refuse to vary from their standards. In making a great number of engines exactly alike we can turn out work at a price that is simply beyond the possible competition of the ordinary European maker. Our labor-saving machines largely compensate for the higher wages we pay. The English and German manufacturers are harassed by consulting mechanical engineers. A man who wants to buy an engine employs an independent consulting engineer. The engineer invariably feels that he must earn his fee by suggesting a change. If a dynamo is adjusted to make 112 revolutions a minute he wants an engine built that will turn it 113. The result is that English and German manufacturers make an endless number of types. What is more, they cannot get away from the thralldom that they are in, and adopt our system of standard types, because they have not the great, broad homogeneous market which America offers to its own manufacturers. I doubt if our manufacturers appreciate the great advantage which they have in this home market where the inhabitants, from the Atlantic to the Pacific, are very much the same kind of people, with very much the same needs and desires. In Europe every manufacturer has a sharply circumscribed field. He is met by new tariffs and new tongues only a short distance from home in whatever direction he goes.

The type of article which can be sold in one district may find no market in another close by. With us the man in Los Angeles wears just the same kind of a hat as the man in Boston, and the people through all that stretch of 3,000 miles are dressed the same, and buy, generally speaking, similar commodities. This broad basis of our own unparalleled market,



American Electric Cars in Seoul—The East Gate.

An electric railway in the capital of Korea built of American material, by an American engineer and operated by American motormen.

which permits a manufacturer to successfully work out a standard article, and then produce an enormous quantity of that exact type, is the most secure basis upon which to build a foreign trade. We alone have that advantage. No European manufacturer can successfully follow in our lead.”

When M. de Witte said that militarism is the nightmare and the ruin of every finance minister, he spoke a truth that

has an application to this question of industrial rivalry. The evidence of militarism is one of the most obvious things in Europe. In Russia one is never out of sight of a line of brown-coated, stolid-faced soldiers. A tremendously effective display of military strength is everywhere encountered in Germany. One is impressed by the cost of the brave attempts of poor Italy to keep up military appearances in the company of first-class powers, a company to which she has not the natural right to aspire. No one can see this universal display without contrasting its cost and the burden which that cost throws on industry, with the comparative freedom from that weight in the United States.

Europe spends annually for military and naval establishment \$1,380,000,000. With our army on something of a war footing, as it is at present, we have only spent in the last year for the army and navy \$205,000,000.

Marked as is this difference of cost, it by no means measures the real weight which militarism puts on the European powers; it is not alone that Europe spends \$1,380,000,000 a year to maintain the military establishment, but very much more important, from the industrial stand-point, is the fact that Europe takes out of her productive capacity 4,000,000 men. These millions are just in the fulness of their youth and would be a tremendous factor in industrial production. The male industrial population of Europe, men between the ages of twenty and sixty, may be estimated at about 300,000,000. To withdraw from productive industry for military purposes 4,000,000 men means a loss of four per cent., and that is in addition to the taxes necessary to raise the \$1,380,000,000 for the annual maintenance of the military establishments. When we perceive the full weight which militarism has hung upon the neck of industry in Europe, we see another enormous handicap which is acting year after year in our favor.

In the course of a conversation with one of the most eminent of European financiers, a man who has added the dis-

tion of notable public service to a business career which made his name familiar in every financial centre, I said that one of the things which had occurred to me in my observation of European affairs, after seeing the tremendous effect upon England herself and through her upon all the countries of Europe of the expenses of the Transvaal War, was that if a small war under modern conditions was to cost so much as the Transvaal War had cost, and was to produce such an effect upon industry and commercial conditions throughout Europe, no great war would in the future be possible.

“You are wrong,” he said.

“That is not clear to me,” I replied. “Let us take Russia for illustration. Suppose Russia was to begin a great war. Where is she to get the money?”

“Let me tell you a little of a war of which I know something,” he said. “I happen to control nearly all the railways of Turkey. Turkey had a war with Greece. Now let us see how she paid the expenses. She raised an army; she paid her army nothing. She transported that army of 60,000 men from the interior of Asia Minor to the Greek border. How did she do that? She commanded our railroads to carry them. Did we carry them? Yes. Have we any pay for it? No; nor will we ever have. So she paid nothing for the transportation of her army. Then she had to arm it. What did she do? She bought arms in Germany. Has she paid for them? No. So she raised her army, transported it, and armed it. The whole cost of that campaign, in fact, was managed without any real expenditure of money.

“So it would be with Russia. I was once in the interior of Persia. I met there, 2,000 miles from the sea, two German tramps. I asked them where they were going. They said: ‘The Pacific Ocean is off here somewhere, and we are making our way toward the Pacific Ocean.’ I asked them, ‘What can you do?’ One said, ‘I can play a trombone.’ The other said: ‘I can weave straw baskets.’ ‘Well,’ I said, ‘how have you got here?’ ‘We can walk, and the people are good,’ was the answer.

"So it is with the army. They can walk, and the people are good. If the people are not good, the army gets its provisions any way. The expenses of a war in Russia, so long as it was in Russia, would be to that nation very small, and the financial situation is not a commanding condition in any considerations of peace or war."

"What is the future of the world with respect to America?" I asked. "If America is to go on in anything like the way she has been going in the last three or four years with her foreign trade—if America is to sell to Europe \$600,000,000 a year more than she buys—what is to be the outcome?"

"Something always happens, and something will happen here. I do not know what it is; I cannot foresee it. America so far seems to be making no mistake, but something will happen. Things cannot go on as they are going. It may be that it is your colonial policy. At present there are 4,000,000 soldiers in Europe, the best of her young manhood, who not only are taken away from production, but are paid for being taken away from production, and Europe is paying six milliards a year to support them. That six milliards does not measure the cost. It is that, plus the loss to production, which hampers commercial Europe, and it is there that you have the great advantage. But what of your future? We are glad to see you going into the Philippines. We will welcome the time if you are going to measure strength with us as a military power. Commercially you are supreme, but if it comes to a test of military strength, if you are going to weight yourselves with the militarism which is the burden of Europe, then we can see some light."

I asked if the tendency in Europe is in the direction of a reduction of military forces. "Not at all," he said. "France hates England, and England hates France; Germany detests France, and France detests Germany; Russia hates Germany, and Germany hates Russia. There it is all around. There is no hope of reduction. It is impossible. England has hoped to come to some understanding with Russia. I spent some time at the home

of Mr. Chamberlain not long ago, and there was a strong hope in his mind that England could come to a better understanding with Russia. But it is impossible, just as it is impossible for France and Germany to come to an arrangement. We are no longer afraid of France. We beat her from a military standpoint, we have beaten her now from a commercial standpoint, and there is nothing else. Commercially we hold a pretty strong position with France. After the war we had a treaty which provided that we should be equal to the most favored nation. France began making special treaties, but as soon as she concluded one we took a place equally favored and strengthened our commercial position. We have beaten her commercially, and I see nothing to fear from France.”

I asked what he thought of the great consolidations of America, such as the steel combinations.

“An autocracy is good or bad according to the autocrat. If he is a good autocrat it is the very best thing possible. If he is a bad autocrat, it is the worst. Who is going to control your trusts? That is the whole question. It is true you have managed your Standard Oil in a way that is creditable, and that has brought satisfaction to the country. The Sugar trust has been in a measure managed as well. But what assurance have we that this great Steel trust is to be managed so well? That is the whole problem. It is the question of men. Undoubtedly it makes you a much more formidable competitor, because it consolidates your interests. But you are a young nation. You are a young people. You are young in this business of consolidation. What has been the world's history when you put great power into the hands of young men? It has sometimes been abused. We shall watch with great interest the course with you in this enormous combination.”

And that is what all Europe is doing—watching with the keenest interest our course as it affects our position in the world's industrial contest.

II

INDUSTRIALLY it is no longer the Old World. It is New Europe and Old America! It is New Europe, a land of undeveloped possibilities, abounding in opportunity for keen captains of industry. It is mature America, the exemplar of modern industrial methods, perfected mechanical ideas, and ripe economic policy.

This conception of a new Europe, looking toward mature America for the best illustrations of industrial development, was novel enough when I first encountered it, but it becomes familiar as one goes from country to country and sees field after field rich in opportunities for the introduction of better methods, the application of better mechanical ideas, and the planting of more correct economic policies. It was in Rome that I first met this thought of a new Europe. I was told that Italy was but thirty years old, that the present economic life dates back only to 1870, and that the modern Roman is to-day an industrial pioneer in a virgin country. Such a thought applied to almost the oldest European civilization is especially striking, but every other country of Europe offers illustrations of the truth of the paradox. We not only find that Italy has suddenly awakened to the possibilities of conserving the force of her enormous water-power, and is beginning a great movement to turn into electrical energy numberless cascades and rapids, but an examination of the industrial side of every other nation shows much that is still unhewn and unwrought. Austria has just

formulated a legislative plan for a great net-work of canals which will cost hundreds of millions of florins and revolutionize the transportation of the empire. Germany, from this industrial point of view, is a picture of youth—new factories on every hand, new development everywhere, and the spirit of the industrial pioneer in all the people. England, wedded as she is to industrial precedent, turning instinctively from methods that mean change, holding close to the ways that were the ways of the fathers, presents a field unploughed when looked at from the point of view



Count Agenor Goluchowski, Foreign Minister of Austria-Hungary.

of the opportunity offered for the introduction of the best industrial methods and the most economical mechanical equipment. France, with her satisfaction over her minute subdivision of ownership and her contentment with small things, offers virgin fields for the exploitation of modern ideas of specialization, combination, and community of interests. Vast Russia, enormous in extent and population, is immaturity itself, new industrially beyond anything America has known for two generations.

When we see that Europe is an industrial field, still undeveloped; that in many directions the methods and practices current in industrial life are as wasteful and expensive as are operations in some new country, we perceive at once that such

a condition has two important relations to our own industrial life. If our foreign competitors are not making the most of their opportunities, their time, and their labor, gauged by our standards, it means that they are under a handicap in competition with our industrial output, and so long as our methods are superior to the methods in vogue in Europe we may look for continued advantage in international competition.

The idea of an undeveloped Europe is of decided interest to us, however, from another point of view. With such a field for development as we have had at home we have become experts in seeing new opportunities, and have become quick to disregard precedent and long-established conditions, and to perceive the advantages which may come from new combinations, modern equipment, and specialized work. An undeveloped Europe, therefore, offers a field in which this special genius of ours may profitably exploit some of the same industrial methods and policies which have proven so successful at home. This is not a mere theory. There are already notable illustrations of success in exactly that sort of thing, and there are promises of many more successes to come. Our great electrical companies have established works in England, France, Germany, and Russia. There are tool-works in Germany equipped with complete sets of American models, American machines, and Yankee foremen. Important portions of London interurban transportation systems have come into American hands and are feeling the vivifying influence of American ideas. The electric street-railroads and lighting-plants in a number of important cities of France are controlled by American interests, and the transportation system of Paris itself is a field which is tempting close investigation on behalf of American capital.

Some attention has heretofore been drawn to the extraordinary balance in America's favor which the last half-dozen years of foreign trade has built up. The settlement by Europe of

these annual trade balances is a problem which has been outlined, and attention has been called to the opinion of many European and not a few American financiers that ultimately the settlement of this trade balance must be effected by America investing in European interests and securities. A few years ago it would have sounded absurd to have talked of the possibility of American capital seeking investment in Europe. The idea is hardly yet so familiar as to make it seem reasonable. It is hard to believe that America, with her endless opportunities, unparalleled richness of natural resources, and admitted pre-eminence in industrial methods, should not continue for a long time to be a more profitable field for the investment of capital than can possibly be found in Europe. For us the disadvantages of distance, of foreign laws and customs, and of competition with great funds of accumulated capital have heretofore seemed to preclude any possibility of our becoming investors across the Atlantic. But this annual trade balance which we have been piling up has been so extraordinary in itself that it seems likely to lead to other unusual features; and among those it now seems easily possible that we shall see American capital become an important factor in European fields.

Naturally, few Americans have gone to Europe to look for investment opportunities. Travellers' descriptions have been endless, but few of them have told us of European conditions from an American investor's point of view. We have in times past had a good many financiers go abroad to convince European capitalists of the credit and good prospects of enterprises that we were developing at home, but it is only within the last few months that Americans have been going abroad to measure investment possibilities, to investigate offerings of securities, and to look into opportunities for profit in new developments, new combinations, and the application of new methods.

If a trade balance of some hundreds of millions of dollars is to be settled by our taking European securities, it becomes decidedly interesting for us to begin to study, from an investor's point of view, the economic conditions prevailing there. It is from such a point of view that I intend to present some of the points that appealed to me as particularly interesting in several of the European countries.

The countries forming the Triple Alliance—Germany, Austria-Hungary, and Italy—offer the most widely divergent industrial conditions; but because of political bonds there has been a close relation between the financial and commercial interests of the three nations, and an interchange of capital, so they have come to form a natural industrial group as well as a political alliance.

Of all the European powers the industrial newness of Italy strikes one most sharply. That is true both as to the actual lack of development, and from the fact that one naturally associates Roman surroundings with age. We are inclined to think of Italy as a land of cathedrals and art-galleries, blue skies and sunshine, where the rich go for pleasure, and the poor stay to beg; and the industrial importance of the country is not a subject that many of our own people have considered deeply. While Italy abounds in glorious history, and is a land of great memories, it has in modern times held a comparatively small place in the industrial history of the world. Developments are going on there now, however, particularly in the north, which promise to bring the measure of Italy's industrial importance much higher up in the column of totals. Southern Italy is hopelessly handicapped for a long time to come by the system of land-ownership, the hardships of taxes, the extreme poverty of the people, and their consequent deterioration from an industrial point of view, and by excessive illiteracy. The elementary and secondary schools there are incredibly bad; teaching is the least honored of the learned professions. Conditions are far better in the north. There are found small individual owner-

ship of land, and an independence and thrift, in striking contrast to the south. The people take more readily to industrial pursuits, too, and there is really striking progress in the recent upbuilding of many industries.

Prior to 1871, when Church and State were separated, and the present political *régime* inaugurated, the industries of Italy were comparatively insignificant, viewed from the standpoint of international trade. The population was largely given up to agriculture. In the thirty years that have elapsed there has been notable industrial growth, and that growth is now going forward at a steadily ac-



Koloman von Széll, Prime Minister of Hungary; also Minister of the Interior.

celerated pace. One-third of all the silk used in the world comes from Italy. Nearly as great progress has been made in the weaving and spinning of the silk cloth as in the production of raw silk. In three years the exports of woven silk have risen from \$65,000,000 to \$100,000,000. Great progress has also been made in cotton-weaving. The industry did not exist twenty-five years ago, while now it employs 80,000 men and produces annually an output valued at \$60,000,000.

The cheap labor of Italy and its comparative efficiency have attracted English manufacturers. Two or three of the best known of the English glove-makers have large factories in

Naples. I saw gloves there being turned out by the thousands, stamped with the imprint of well-known English names, and completed by the addition of buttons bearing the legend "Made in England"—a bit of commercial artifice that must be confusing to customs officials when they later attempt to classify England's exports. Endless cartons of beautifully fashioned artificial flowers, believed by the people who buy them to have been created by the deft touch of Parisian fingers, are likewise made in Naples, and later have 100 per cent. or more added to their value by having French names pasted on the boxes.

The industrial development of Italy has two distressing impediments. One is the high rate of taxes, the other the high cost of fuel. In army-ridden Europe there is no other country where the *per capita* cost of maintaining the military establishment is so great as it is in Italy, and no other country where the people are so little able to afford the glories of armies in the field and of fleets at sea. Italy as a nation is out of her rank in attempting to maintain a first-class war footing, and, until her military expenditures are reduced to a point commensurate with her population and wealth the military burden will be an almost insurmountable obstacle to the desire of her commercial citizens to have the country take foremost rank as a producing nation.

A hinderance to industrial growth, second in importance to that of the demand of the war-chests, is the lack of coal. All the coal used on the railroads and in the factories is shipped from other countries, and Italy's trade balance is reduced each year by the full amount of her fuel bill. This not only has a most unfavorable effect on her balance of trade, but it means that the cost of fuel in Italy is very much higher than is the cost in any of the countries with which she must compete industrially. At Italian seaports the price of coal ranges from \$7 to \$10 a ton. In Milan manufacturers pay \$12 a ton for coal for which German manufacturers pay \$6, which the English manufacturer can get for \$4, and which is laid down at

many factories in the United States at \$2.50 a ton. There is only one locality in the kingdom where coal is mined, and the output is small and the quality poor.

There seems to be more prospect ahead for Italian industries being relieved from the burden of high fuel charges than from the weight of excessive military taxes. Italy abounds in water-power, and there is just now a great awakening in regard to the development of that latent energy. Manufacturers are coming to understand that future development will most likely be reached along lines of securing power at low cost. Italy is remarkably favored with water-power. To the north are the Alps, and the Apennines run far south along the centre of the Peninsula. The country is an immense water-shed, down which innumerable streams flow, none of them very large, but all falling a great distance, and developing in their descent a prodigious amount of power. Engineers who have made a study of the situation estimate that the rivers of Italy can be made to furnish more than 2,500,000 horse-power, which has a value equivalent to coal now costing \$125,000,000. More than 1,000 companies have been organized in the last few years to erect power plants along these streams.

Italy is lacking in any large fund of capital available for aiding her industrial development. Investment in stock companies has not yet become popular. The Italian is extremely distrustful in finance; his distrust has a fundamental basis in a fear even of banks and bank accounts. He wants to keep his property out of the sight of a tax-gatherer, and he does not put great dependence in the commercial signature of his fellow. The use of bank-checks in current daily business is almost unknown. There are large savings-bank deposits, but the people have not reached a point in commercial development where they will give their capital an effective aggregate by investment in corporate securities. Before Italy cut loose from France and joined her political fortunes with Austria and Germany, French capital had looked with favor upon Italian

enterprises. After the political changes of 1887, the Italian exports to France dropped from \$81,000,000 to \$34,000,000, and have continued at about the lower figure, and French capital ceased to flow into Italian investments. That has in a measure been compensated for by the interest that German capital has taken in financial operations, but Germany's own industrial development went on so rapidly and has now come to so many misfortunes that the present offering of German capital is much restricted.

Italy would look with great favor upon any project to interest American capitalists in her industrial development, and undoubtedly a field is there offered which will bear some inspection at the hands of our financiers. In certain lines there is no possibility of Italy successfully competing with the United States, England, and Germany. The lack of coal will leave the country out of the race in iron and steel manufactures. In those lines of industry, however, where cheap labor is required, and where the cost of raw material is favorable, there promises to be much success. The labor is skilful and effective, and manufacturers are not slow in accepting mechanical improvements and adopting modern methods. The fact that the country is not on a gold basis is a drawback. Italian financiers are anxious to establish the gold standard. The Finance Minister, Signor Chimirri, told me that he had strong hopes of success in that direction. It is recognized that the present uncertainty regarding the value of the Italian money standard acts as a serious deterrent to the investment of foreign capital in the country. An excessive issue of bank-notes, a survival of former days, is the main reason for the depreciation of the currency, but the Government now has a definite programme for reducing the bank-note circulation by a fixed amount each year. Political conditions are in many respects most unsatisfactory. In many sections there is distressing poverty; and the high price for food, made necessary by heavy taxation, brings dire hardships into the lives of the common people. It

has been estimated that the average Italian laborer has 310 pounds of cereal food during the year, which is twenty five per cent. less than is given the inmate of an English work-house. Socialism is rampant, and the Government must be constantly on the alert to prevent uprising. Judging by the precautions taken, there are sections of the country at all times on the point of an outbreak against constituted authority, inspired by no very definite political reasons and due more to the desperation of hunger than to ideas in political opposition to the Government. The people are under the domination of an army



Landerbank, Vienna.

which takes not only the best blood of the country, but imposes an almost unbearable weight of taxation on those left to carry the burden. The army and navy alone absorb six per cent. of the country's income; or in other words, out of every \$100 earned in Italy, \$6 is taken by the Government in support of the military establishment.

The social and political unrest, the burdens of taxation, and the uncertain money standard must cause foreign capital to hesitate even before opportunities that may look alluring, while those same impediments, together with a lack of some of the most essential raw materials and of home capital, must make the further industrial development of the country slow when measured by our standards. The United States has no need to fear Italian competition in the world's markets in any of the great staples of our manufactures. There is, however, easy possibility of greatly increasing our sales to Italy, particularly if her industrial development goes forward along lines

which permit her to sell to us some commodities which we can better buy than produce.

In the closing days of his public career Prince Bismarck found occasion to say, "Poor Austria, I fear her days are numbered." Let us hope the Chancellor did not speak prophetically, but he certainly spoke with profound perception of the cross-drifts which are the despair of the statesmen of Austria-Hungary. One of the most restive, bewildering, and bewildered state-unions in existence is the Dual Monarchy, a country at once one and divided, a people ready to overturn their government for a language preference, a country of twenty tongues, each one berating the other, a country the one-half of which puts trade barriers in the way of the other half; Hungary jealous of Austria, and Austria unable to forgive Hungary its superior prosperity. The monarchy is made up of conglomerate peoples, unable to act and think together, and habitually threatening to act and think apart. In no other country of Europe are industrial conditions so complicated by politics, hereditary jealousies, class distinctions, church influences, and a babel of tongues that cannot be harmonized either in speech or sentiments. For the present the personality of the venerable Franz Joseph holds together these varied elements. What will come to the Dual Monarchy after Franz Joseph is a question never out of the mind of any European statesman.

It is in the midst of this political turmoil that the idea was born for a European tariff alliance against America. It is here that one finds the keenest antagonism toward commercial America, and the most earnest efforts to block by legislation a commercial invasion that could not be met by methods of superior industrial merit.

The president of the Chamber of Commerce at Vienna explained to me the Austrian position on this matter of tariff discrimination against the United States. "America is destined, beyond question, to be a most powerful country," said he.

“We regard it as the most dangerous competitor in all our markets. The marrow and bone of her prosperity we believe to be her protective tariff, which has enabled her to build up her industries and develop her resources. The Steel Trust shows us what we have to expect in the future. We shall have to adopt the same policy, and we will do it. Whenever we discover that American competition is hurting any of our industries, we shall certainly shut out America if we can. If we do not succeed in making a satisfactory treaty with the United States, we shall look to Russia and Australia for the raw materials we may need, for to those countries we shall be able to sell the products of our industry.”

These words must not be considered as the expression of a private citizen, but as having official character, for the Chamber of Commerce is an official advisory institution for the aid of the government in the preparation of legislation. The best judgment in Europe and America is, I believe, pretty well agreed on the futility of a European tariff alliance against the United States. Not one of our ambassadors or ministers believes it is a feasible programme for the European States, no matter how antagonistic European statesmen may become toward us on account of our commercial success in foreign fields. I found no important banker or manufacturer who thought it probable that the conflicting interests of the various States could be brought to any harmonious point of view from which to formulate such a tariff. Undoubtedly it is a dream in the minds of many people who have not a clear idea of the difficulties involved, but certainly the best judgment of the two continents seems against the feasibility of the idea. Conflicting interests can never be harmonized so that an agreement will be reached among the nations. Indeed, conflicting interests in the Dual Monarchy itself can probably never be harmonized so as to support Count Goluchowski's programme. Austria is a manufacturing country. Her people have highly developed artistic faculties, and a deftness and skill which make

her a leader in certain of the finer lines of production, and she has some standing as a producer of iron, steel, and machinery. Hungary, on the other hand, is as yet almost altogether an agricultural country. Austria wants high tariff and cheap food;



The Treasury Building, Vienna.

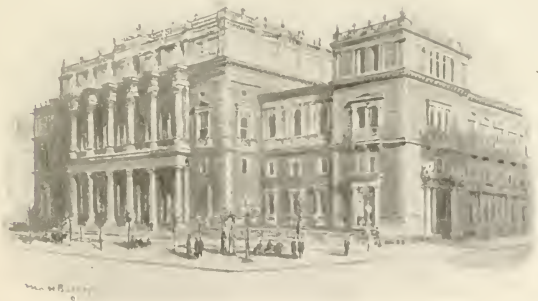
Hungary would like to exclude foreign food and have the advantage of cheap foreign manufactures. The two parts of the monarchy are held together by a slender thread, and the fretful people that compose the two nations will only agree that that bond may hold them for ten years at a time. The Ausgleich expired in 1897, and for four years the two States have wrangled over its renewal, industry and commerce being all that time greatly perturbed.

If we look at Austria as a competitor for the world's trade, it is easy to see that there is small occasion for us to be alarmed. The obstacle which political conditions set up in the way of industrial progress are almost insurmountable. Everywhere in Europe there is found a weight of taxes bearing on industry much greater than with us. In Austria this is notably so. A Viennese engineer who builds iron bridges on a large scale told me something of the difficulties an Austrian manufacturer has to face as a result of the visits of the tax-gatherer:

“In calculating the cost of a piece of work,” he said, “there are three important elements: the cost of the material, the cost of labor, and the allowance for taxation. Our tax laws are somewhat complicated, but I have found that an approximation, which is close, will amount to sixty per cent. of the labor cost, which we must add for taxes.”

If manufacturers in this country were obliged to add to the cost of their products sixty per cent. of what they pay for the labor that enters into them as a contribution to federal taxation, our success in the world’s competition would be slow.

In Vienna I met an American who is at the head of one of the large boiler-works in this country. He had been interested in making comparisons of the cost of labor and of the



The Bourse, Vienna.

methods of work in the Viennese factories, and I found him amazed at the wasteful methods and the high labor-cost that resulted from the Austrian manufacturers failing to use modern machinery.

“I was informed in one shop,” he told me, “that a boiler of about 150 horse-power cost for labor alone \$750. That

boiler would have been built in an up-to-date shop in America for a labor cost of \$150. In the United States three workmen with modern tools would accomplish as much in one day as would be done by four workmen in a Vienna shop working one week. The cost of the labor in the United States would be about \$5, the men receiving for this class of rough work a little more than \$1.50 a day. Of the four men in the Vienna shop, two would receive eighty cents a day, one sixty cents, and one forty cents, but even at those low wages the total labor cost there would be \$15.60 against about \$5 with us. I found an almost total absence of labor-saving machinery in some of the largest shops in Vienna—plates were being handled by hand; there were no riveting machines, no travelling cranes, or modern hoists."

I asked a large manufacturer in Vienna why he did not introduce modern labor-saving machinery. He had been in American shops and was fairly well posted on what was possible in the way of reducing the amount of labor entering into his product. His line of reasoning was interesting:

"You will not find the latest labor-saving machinery here," he said, "because labor is so cheap that it does not pay to have the best machinery as it does with you. If we invest money in labor-saving machinery, the interest on the cost of that investment goes on every day in the year, and every succeeding year, whether times are good or bad and orders many or few. With our cheap labor it is different. When we have a rush of work we can employ more men; in slack seasons we can discharge them. The trouble with labor-saving machinery is that you cannot discharge it when you have no work for it to do."

Labor waste is not confined to industrial life, by any means. Austria furnishes endless illustration of a situation which is found in about all the European countries, but which is in its highest development in Italy, Austria, and Russia. In those countries the greatest ingenuity has been exercised in devising

positions where the service performed is useless. Everywhere flunkeys stand ready to perform unnecessary services for one. You are not given an opportunity even to open the door—a retainer always stands ready to do it for you, and then hold out his hand. If you call at a bank or public office, the *concierge* opens the door with great obsequiousness and hands you over to a guide, who shows you to the door of the room sought, where a flunkey takes your hat and coat, another your



Austrian Women Mixing Mortar.

card, and still another ushers you in. On leaving, it is advisable to remember all these hard-working citizens with a pittance if you intend to make another visit and desire easy access. All this is typical of the way labor is wasted in the greater part of the Continent of Europe. The thing seems to be done on principle, and to be generally approved on the ground that that system is best which keeps the most people employed. Any man who can create two jobs where there was only one job before, appears to be regarded as a public benefactor. The street-sprinkling carts in Vienna make a good illustration. A horse

about six feet long is attached to the rear of the cart, and a rope about ten feet long is tied to the end of the hose. One man drives the cart while another walks behind holding the rope and swinging the hose from side to side. If an American should try to introduce sprinkling-carts that can be operated by the driver, he would certainly be unpopular. "Why rob a poor man of his job? There is not enough work now to go round, and labor is cheap. It's a small matter. These people are not able to do anything else; they have no trade, and if you introduce a device which renders their help unnecessary you simply force them to starve and become a burden upon the State." That is the kind of Chinese economics which I heard from educated men in various cities on the Continent. It did not seem to occur to them that work makes work; that the amount of work which the world wants done and is ready to pay for is capable of indefinite increase, or that habits of slothful and unnecessary work must breed a people incapable of energy and enterprise. It takes two men to handle a plough in Europe, not because one man really cannot do it alone, but because public sentiment approves the employment of an extra man wherever the slightest excuse can be found for him.

It needs only the period covered by the memory of a man still young to make the comparison which will show that the industrial life of Germany is in its beginnings. The picture of Germany twenty-five years ago, contrasted with the industrial Germany of to-day, shows a genius for work, a determination for development, and a rapidity of progress which can be matched nowhere in the world, unless it is in the United States. The Germany of thirty-five years ago bore almost as little relation to the Germany of to-day as did some portions of the United States to our present condition.

A great plain covering the entire north and east of the country where small crops were grown at high cost and with great labor; a table-land in the south almost as barren; a few

seaports, in only two of which was there entrance for vessels of the deepest draught; a large system of shallow rivers; fertile valleys in the south and west, but covering not over one-tenth of the area of the country; large deposits of low grade iron ore; a coal area limited in extent with deep-lying seams from which came a product of poor quality; small deposits of cop-



The Bank of Italy, Rome.

per, lead, and zinc; a large forest in the south; a small commerce; a manufacturing industry hardly worthy of the name; a disordered currency, a disorganized banking system, a deranged financial system, a confused foreign policy; a people divided into twenty-three States with only the tie of a common customs union, the coercion of the Prussian hegemony, and a common language and literature—such were the materials of thirty-five

years ago, out of which modern Germany was to be constructed.

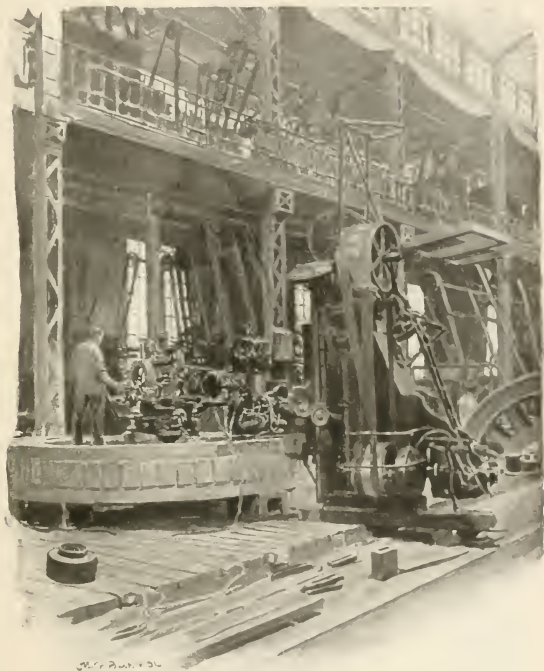
A population numbering 56,000,000, firmly united into a great national state; a system of internal communication the second largest in the world; a foreign commerce inferior only to that of England and the United States, which has reached out to the uttermost parts of the world in its conquest of markets, and has won its place in the face of long-standing commercial connections: a system of industry which has utilized to the full every resource the nation possessed, which has brought the waste places under cultivation, and by careful methods of scientific agriculture has developed the yield of the soil more than threefold, creating *de novo* the beet-sugar industry; a system



An American Cash-register in Austria.

which has quadrupled the production of coal and tripled the production of iron; which has developed the greatest chemical trade, the second largest electrical industries, the third textile, iron, and

steel industries, and the second shipping system of the whole world; which has tripled the city population, reduced a large and



Interior of an Electric Manufactory in Germany. The Machines in the Foreground were Made in America.

threatening emigration to insignificant proportions, raised wages, increased the value of land, and tripled the revenues of the State; a strong, self-reliant, progressive, prosperous nation—such is modern Germany, the result of thirty years of nation-building.

Never before in the industrial history of the world, unless we except the victory of the same race in the Low Countries

over the waves and tides of the German Ocean, has such success been achieved against such heavy odds. England has succeeded, but England was never cursed by invasion and civil war. England's soil is fertile. Her coasts are indented with fine harbors. Her security made her the home of the great inventions, and those inventions gave her the commerce of the world for more than three-quarters of the nineteenth century. The United States has succeeded, but the United States was blessed with the richest heritage of natural wealth that ever fell to the lot of any people. Planted in the midst of a continent, with a soil of extraordinary richness; with the coal seams lying open on the river-banks, and iron only needed to be quarried from the surface; with river systems penetrating every part of the country, and a chain of lakes to supplement the rivers; with great harbors to receive and send out foreign trade, and with the hungry multitudes of Europe in sore need of our surplus—with all these natural advantages, and with only one serious catastrophe to our national development for eighty years, it is no wonder we have succeeded.

Germany had none of these advantages. Germany must needs dredge her seaports, deepen her rivers, supply her deficiencies in raw material by importation, import the machinery for her factories, and the technical skill to direct the machinery; build a railroad system to carry her manufactured goods long distances to the sea-coast; and when she has done all this must fight her way into markets which England and France had long since occupied. To do all this while guarding against invasion on both frontiers, and bearing a heavy burden of taxation and military service, to succeed with no other aids than those of the national genius for hard work and the national ambition for a great and commanding place among nations, and to win such success in the face of such difficulties is an achievement before which both England and America should uncover in admiration and surprise. If the measure of success which a nation achieves over adverse circumstances is the

test of greatness, then Germany is the greatest nation in the world.

I reached Germany fresh from a study of most of the other Continental countries. In none of them had I found anything



Endless Chain Hod Elevator in Use in America.

to lessen the conviction with which every American goes abroad, that his own country is superior in every respect to all other nations. Most of those nations are in one respect or another unmodern and unprogressive. They are succeeding slowly, and in few of the countries are the whole people united in an effort

to achieve success. Their industrial regeneration is only just beginning: the United States has little to learn from them.

But in Germany we find not only a state with apparently a great future, but a state which has begun to realize that future in a thoroughly modern way. The system of education, elementary, secondary and university, certainly rivals, and is probably superior to our own. It is a system which leaves less than three per cent. of the population illiterate, and sifts out the brightest minds and trains them for the service of the State. The State in turn is eager and anxious to avail itself of the services of men who have won intellectual distinction. There is a system of commercial education whose founders realized that successfully to deal with foreigners requires a speaking and writing knowledge of their language. There is a national and municipal administration which in their effectiveness and absolute integrity must bring shame to the resident of almost any American city when he compares them with conditions surrounding him at home. The Government has encouraged commerce and foreign trade with great intelligence. It has established the gold standard and so organized the Reichsbank, that the mechanism of exchange has the foundation of secure confidence. It has aided in the establishment of German banks abroad, and placed German traders in the position of distinct advantage in pushing their commercial conquests. A trained consular service has been developed, composed of men who speak the language of the country to which they are sent, and who use the language to find out whatever may be of service to the German exporter.

The Government has pursued a consistent policy in its trade relations and commercial treaties, which has all along been wisely adapted to the needs of the national economy. While the industries were getting a foothold, they were protected by high duties. When their development had reached the stage of independence, and when their chief need was new markets, the government made concessions to neighboring

States in the customs tariff, and, by a series of treaties completed in 1893, admitted raw materials at low duties in return for similar privileges conceded to German manufactured exports. The Government early saw that private railway management in Germany was unfavorable to the export trade, because it had not learned the lesson of scientific rate-making, which we in the United States have only in recent years mastered. Perceiving this fact, the German Government took



An American Sewing Machine in Belgium.

most of the private lines, and added to them until, in 1901, out of 30,777 miles of railway more than 27,000 belonged to the State. In full control of the railway system, the State administration has worked out, very successfully, the basic principles of rate-making, to increase the rates with the value of the freight. It has granted low rates on iron and coal, to which concessions the iron and steel industry of Westphalia owes in large measure its prosperity. The German Government also has not hesitated to use the bounty system to build up the national industries. The beet-sugar industry owes its existence

quite as much to the aid of the State as to the painstaking care of the owner and scientist, and in a single year the exports of sugar and glucose to Great Britain from Germany have amounted to more than \$50,000,000. The German merchant marine has been intelligently assisted by liberal subsidies. I found among business men a quite general agreement as to the great benefits which industry and commerce had derived from subsidies.

I asked Mr. Louis J. Magee, who might be called an American-German, since he was born and educated in this country, but has spent twelve years in Germany as the managing director of the Union Electrical Gesellschaft, what in his opinion were the relative advantages of Germany and America. His reply is suggestive: "Most Americans are mistaken when they imagine that America is much ahead of Germany in manufacturing. It is six of one and half a dozen of the other. In some lines the United States has the advantage and is sending in goods to Germany. This is true of type-writers, bicycles, and of some other specialties requiring interchangeable parts. It is hardly true that Germany cannot make these things as well as America, but rather that it is more convenient and cheaper for Germany to buy them of America than make them. Our company, for instance, might make much of the machinery that we use, but it has relations with the parent company in America, and so buys the things from America. It should be noted also that Germany excels in some specialties; for example, the Mauser rifle. It is the best in the world, and Germany is exporting it to all countries. In the same way your laboratories import certain chemicals and certain instruments from Germany, not because America cannot make them, but because they are cheaply made in Germany and that is the best place to get them. Americans make a great mistake in supposing that Germany is not up to date. Every German manufacturer knows exactly what is being done in his line in the United States, and knows what kind of machinery is being

used. If he does not use it himself he has a reason that is satisfactory to him. The Germans are more conservative than the Americans.

“ This fact can be illustrated, perhaps, by the automobile cab system. A superficial observer, knowing that these cabs were in use in American cities, would draw the conclusion that



W. R. Koch, Director of the German Imperial Bank.

Germany was not so progressive as America. But if he happened to know that the companies in Boston and Chicago had been financially unsuccessful, his conclusion might not be so unfavorable to the German. The German has considered the advantages of the electric cab very carefully, and has not introduced them in the German cities simply because he has decided that they would not pay.”

Somewhat along this line Mr. Magee spoke of the Germans' ability in the field of science, and commended their habit of stimulating and encouraging independent investigation. He

regarded the Germans in this respect as superior to the Americans. "Americans are brilliant," he said, "and many splendid ideas—which the Germans call epoch-making—such as the cotton-gin, have come spontaneously. In the main, however, this is not the case. The great discoveries of the world have come, as a rule, as the result of patient effort and study. In this the Germans are adepts. In Germany every encouragement is given to a man to devote time and thought to new ways of doing things. Mr. Magee spoke of the Nernst lamp in this connection. This discovery of a German professor will make it possible, it is believed, to secure illumination from electricity with only half of the current used that is now necessary. It will throw into the hands of many thousands of people the possibility of using this form of illumination. "It is quite possible," Mr. Magee said, "that improvements on this lamp may come from America. It will still be the Nernst lamp, however. What I want to see is a Nernst in America." During the last few years the reports of scientific discoveries contained in the American scientific journals have contained hardly an American name to act as a land-mark. The names of the chief men in science to-day are, with almost no exceptions, men of foreign birth or descent."

"The difference," said Mr. Magee, "lies in the fact that the Germans are patient, studious, thorough people, and they go to the bottom of things. The Americans, on the other hand, are more or less superficial. They are brilliant, but they haven't time to look at a subject from all sides and probe into it deeply as the Germans do. In science, particularly, there isn't the inducement that is offered to investigators here in this country. In other fields the same conditions hold true. In political economy, for instance, you find the same thing. A man learns a little from his Walker and his Adam Smith in college, but he does not, as the Germans do, have pointed out to him the exact places where the requirements are not fulfilled, where the shoe pinches, and then set to work to gather all the data

bearing on that particular part of the problem, in order that he may find a solution of the difficulty.”

One is at once impressed with the fact that the Germans have been quicker than other nations to take advantage of improved machinery and methods. An inspection of our exports to Germany in the last half-dozen years shows an ex-



Warehouses and Docks at Hamburg, Showing Advanced Methods of Handling Freight.

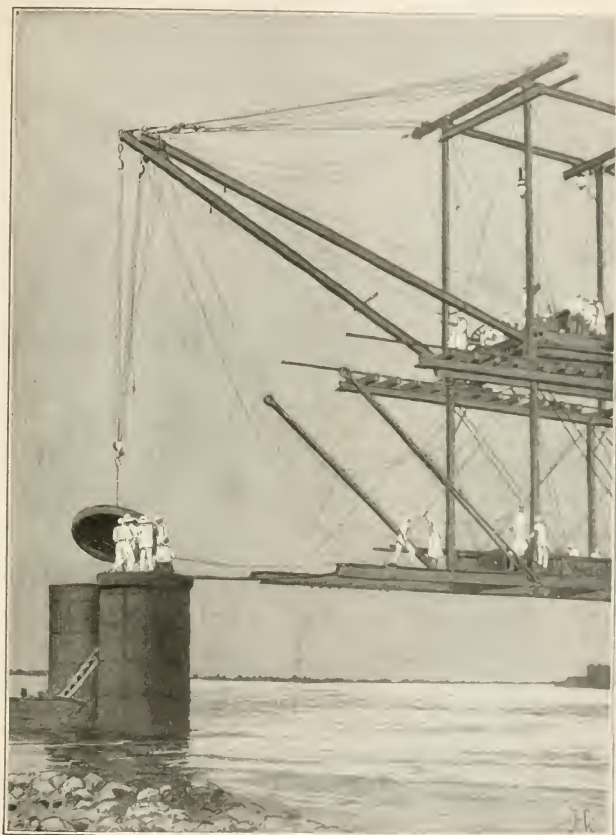
tremely satisfactory increase in our sales of manufactured goods, but an analysis of the character of those manufactures brings out the fact that a large part has been in labor-saving machines, whose economies have at once been turned against us. There are some shops in Germany that are quite as admirably fitted with modern machinery as would be corresponding shops with us; and with such superior equipment, and with labor costing

little if any more than half what our labor is paid, the German manufacturer will make us look to our laurels.

It is true that present economic conditions in Germany are far from satisfactory. Germany has gone ahead under too great a pressure. The pendulum has swung too far and is swinging back. There has for some months been a marked depression in many manufacturing lines, and conditions have prevailed that have caused apprehension and loss. The German banks do not follow the conservative English and American custom regarding the promotion of industrial enterprises, and some of them have become involved in the fate of corporations which they have promoted and whose securities they have sold to their clients. I believe the unsatisfactory situation in Germany, however, is only a reaction from too rapid progress; the fundamental conditions are sound, and in the world's markets we are pretty sure to find Germany one of our most able competitors.

While the conditions surrounding investments in Germany are in many respects much better than in Italy or Austria-Hungary, the superior conditions are compensated by lower interest returns. The Germans are wide-awake financiers, as well as manufacturers, and the opportunity for American capitalists to teach them lessons is not as good as in most of the other European countries. In some respects we could learn a good deal that would be of advantage to our own investment circles from the German practice. A code of corporation laws has been enacted that has many points of great excellence, but the Government has shown its paternalism to a great degree in its effort to control operations on the stock and produce exchanges, and business has been much hampered from that cause.

Kaiser Wilhelm has said—and industrial Germany agrees with him—that the future of the German nation lies on the sea. Germany is a poor country. Her coal mines are, in some places, 3,000 feet deep. Her iron ores must be supple-



The Atbara Bridge, Sudan, in the Course of Construction.

This bridge was built by an American firm, who underbid the English contractor and shortened the time required by the English bidders from twenty-six weeks to fourteen.

mented from the richer deposits of Spain and Sweden. As population increases, Germany must import an increasing proportion of her food-supply. Her raw silk and cotton must be imported, and in fact she is independent in no single raw



From a photograph owned by the Engineering Magazine.

Aqueduct Bridge, Head Basin and Power Plant of the Vizzola-Ticino Water-power Installation in Lombardy, Italy.

"Italy abounds in water-power, and there is just now a great awakening in regard to the development of that latent energy."—Page 43.

material. Her people must levy upon the whole world for their sustenance and to maintain their industries. To such a nation foreign commerce is as the breath of life. If four continents should sink into the sea, the United States would still live. But cut off Germany from her foreign trade, and she must perish.

To sum up the situation, so far as the nations of the Triple Alliance are concerned, we see that Italy and the Dual Monarchy are not likely to become formidable competitors of ours in the world's markets; that Germany is endowed with a spirit and ambition which will probably make her our keenest rival, although we have clear advantages in cheap raw materials. If we turn our attention toward investments in these countries, attractive opportunities will be found in Italy, but hampered by an uncertain currency standard and excessive taxation. Opportunity for the introduction of improved methods is even greater in Austria, but political uncertainties and racial antagonism more than counteract that advantage, and the money standard is quite as uncertain as in Italy. There is much greater investment safety in Germany, and that, I believe is true, in spite of the headlong declines which securities have made on the German exchanges.

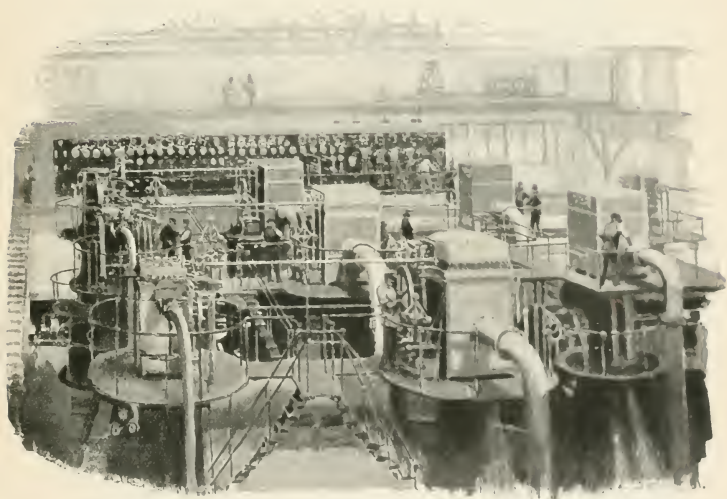


A Mortar Carrier, Vienna.

III

IT is in Great Britain that we find in its fullest development the effect of the American commercial invasion of the world's markets. It is true that American competition has been making notable inroads into the commerce of all the countries of Europe. But important as is the effect which has been produced upon commercial conditions in the Continental countries, that result is almost insignificant when compared with the consequence of this competition in Great Britain. From the beginning of our history England has formed our most important market, and for two generations at least we have been the largest customers for English products. In the last half-dozen years a change has taken place in the trade balance between the two nations which is, perhaps, the most notable single commercial event to be recorded in the last decade. We have been steadily reducing our purchases from the mother-country; we have been making astounding increases in our sales to her. Comparing, for instance, the change which has taken place in the trade movement between the two nations in the last half-dozen years we see that our annual purchases from the United Kingdom have dropped \$16,000,000, standing last year at \$143,000,000. In the same period our sales to Great Britain nearly doubled, going up from \$387,000,000 in 1895 to \$631,000,000 last year. This change in the annual trade balance, showing for us a more favorable total by \$260,000,000 than we had six years ago, is a change of such import

as can only mean revolutionary transformation in the industrial life of the two nations. These figures are so significant that they need to be dwelt on somewhat, to fix in the mind their importance. Six years ago we sold to Great Britain \$228,000,000 more than we bought. Last year we sold to her \$488,000,000 more than our purchases. In every business day last year we sent to her \$1,500,000 more than we bought. For



American-built Engines in a Glasgow Electric Line Power-house.

every dollar's worth of goods we bought we sold her four dollars and forty-one cents' worth of our products.

The relative importance of the increase in our trade with Great Britain is shown when we compare it with the increase which we have made in our sales to all the rest of Europe. Noting that our favorable balance in the trade with Great Britain last year showed an increase of \$488,000,000 over the record of 1895, we find that that figure compares with an in-



An American Electric Travelling Crane, Nijni Novgorod, Russia.

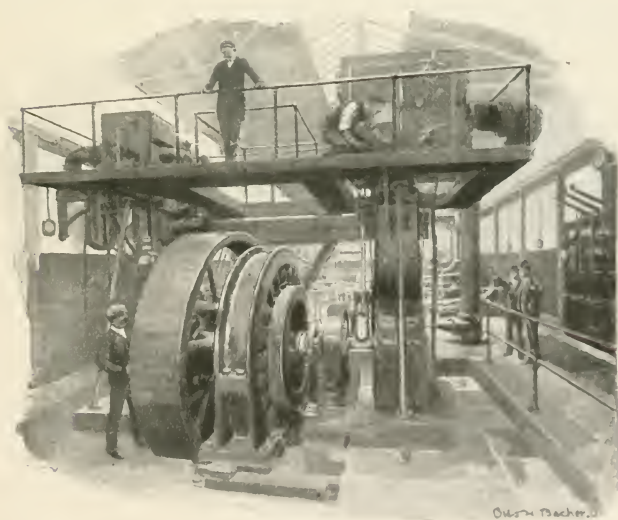
This shows a small locomotive hanging in the air, one end being supported by a frame and the other by a chain sling. Capacity, forty tons.

crease in the same period of \$219,000,000 in our trade with all Continental Europe.

Such figures as these make it easy to see why the industries of Great Britain have more keenly felt our competition than has the rest of Europe, but even these statistics by no means measure in its full significance the effect upon British commerce of the "American invasion."

The nineteenth century may well be said to have been the century of Great Britain's commercial supremacy. During that hundred years the industries of the country stood pre-eminent in almost every line of manufacturing. British manufacturers commanded completely their domestic field, but they did much more than that. They were in easy control of the greater part of the world's commerce in manufactured products. Not only have their workshops held a commanding position, but pre-eminence has been made more secure by control, in large measure, of the commercial fleets of the world.

When our own manufacturers began seriously to reach out a few years ago for foreign trade, there were few of them with the hardihood to attempt to meet British competition in the home field. What we did do was successfully to compete at points so far distant from the British factories that our own producers were little handicapped in the way of freight charges. We successfully entered the South African gold-fields and supplied most of the machinery for operating the deep mines of the Rand. We went into the harvest fields of almost every British colony and sold agricultural implements to cultivate and gather their grain. We began successfully to compete in bridge-building on the pioneer railroads of Africa, and then we supplied those railways with locomotives, as we did also the government lines of India and the Far East. Our success extended rapidly and it soon became evident that the political

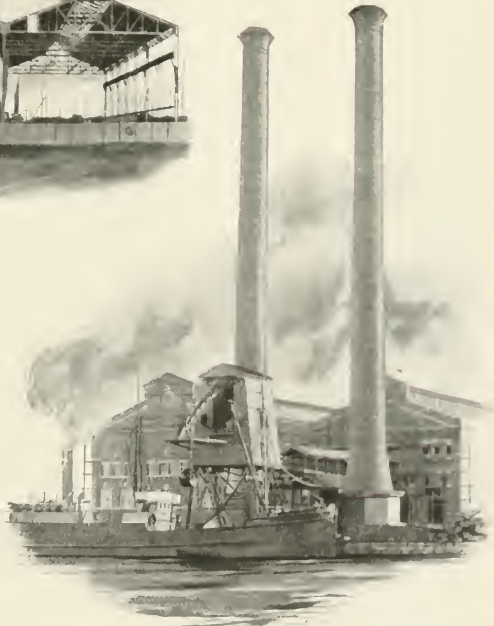
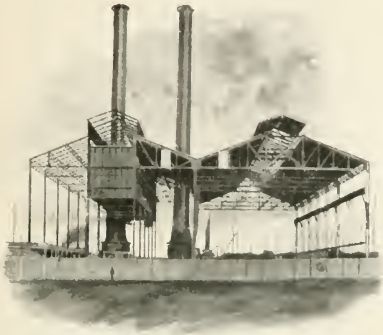


American-built Vertical Engine in the Electric Tramway Power-house, Dublin.

ties of Great Britain's colonies were not in themselves sufficient to bind to her their trade. For a good many years English contractors had things their own way in railroad-building in the British colonies. One day we shocked them when their own best bid of 15 guineas a ton for constructing the Atbara Bridge was met by an American bid of £10 13s. 6d., and their time of twenty-six weeks was cut by the American contractor to fourteen weeks. They were soon still more surprised when the bids for the Gokteik viaduct in Burma were opened. This was a much more important work. The best English bid was £26 10s. per ton, with three years' time to complete the job. Americans took the contract at £15 a ton and completed the work in twelve months. The Ugandy viaducts, still more important in size, were built by American contractors at a cost twenty per cent. below the English price, and they were completed in forty-six weeks, against the English requirement of 130 weeks.

Such illustrations might be almost indefinitely extended, nor would they need to be confined to bridge-building. Their special importance is in the basis which they formed for a manufacturing competition which drew nearer and nearer to the home market of English manufacturers. Success upon success has attended our efforts to compete industrially with England, until we are at last sending our manufactured goods into the centre of the Englishmen's domestic field. There are English districts whose names have become words in our language synonymous with certain great classes of manufactured goods. We have come to compete successfully in those very fields in their great specialties. It is literally true that we have sold cottons in Manchester, pig-iron in Lancashire, and steel in Sheffield.

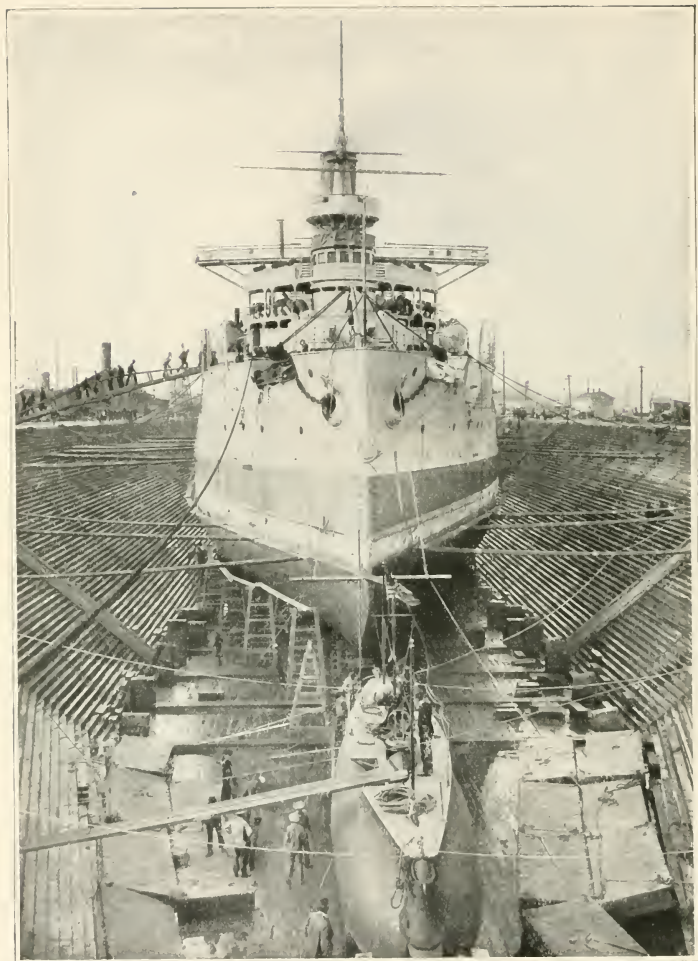
Details of this invasion cover a broad field. The changed relations between the industries of the two countries are probably the most pronounced in the production of iron and steel, but in a hundred lines of manufactures statistics tell the same story of great growth in our exports and quiescence or deca-



American Steel Buildings and Steel Chimney Stacks for an Electric Tramway Power-house, Dublin.

(In course of construction.)

dence in the corresponding British field. Much less than a score of years ago England produced twice as much pig-iron as was produced in the United States. Now we have an output half as much again as England's, in spite of the fact that her own industry has steadily grown. For many years we drew



From a photograph by E. Muller, Brooklyn.

The Battle-ship Retvizan, Built in America for the Russian Government.
(Holland submarine boat in foreground.)

upon England for great stocks of iron. Our early railroads were laid with English rails. Now we are shipping many thousand tons back across the Atlantic to her and to her colonies around the world. The record in iron has been far eclipsed by the development in steel production. We reached a point where we could put unwrought steel into the English markets in successful competition with the steel-mills there, and with



From a copyrighted photograph by Frank Hegger, New York.

The Bank of England, London.

English conservatism will not permit a telephone within the sacred precincts of this building.

that as a basis to build on and with the aid of superior mechanical genius we have built up a market of great proportions for almost every line of iron and steel manufactures. We sent to England in a single year 100 locomotives. We have sent numberless stationary engines of all types and sizes, and with them boilers, pipes, pumps and pumping machinery, car wheels by the thousand, wire and wire nails, metal-working machinery of every type, and great shipments of electrical dynamos and appliances.

One of the industries that has felt most severely the American competition is the tin-plate trade of South Wales. Ten years ago it was a gigantic industry. It had no thought of competition in the home field and had complete control of the American market. In 1890, 330,000 tons of tin-plates were exported from Wales to America. Soon after that we began turning out, almost in an experimental way, a small product of tin-plate. That production has increased with such rapidity that our manufacturers are practically in control of their home market and have actually landed at Cardiff large shipments of American tin-plate.

England's coal-mines have been one of her most important sources of wealth. They have given to her manufacturers cheap motive power which has been one of their most important advantages. They have propelled the commercial fleets of the world, and their product has formed England's most important export. Coal has been the main support of the shipping industries which have given her so much of her commercial supremacy, constituting, as it has, four-fifths of the weight of all the commodities exported from the British Isles. England owns sixty per cent. of the world's steam tonnage, and anything which threatens seriously to alter the established order in freight movements is of great commercial import. The foreign-trade returns do not yet show us as a great factor in the world's coal trade. England is still the dominating producer. But while the extent to which our exports have attained is not material, the figures which show the beginning of our entrance into the world's coal markets are in some ways more significant than any others that our foreign trade presents. We are just in the beginning of what is certain to be an economic development of world-wide importance. English authorities themselves recognize this and admit that a new current of trade has been set in motion that will sweep away a lot of old landmarks. Our production of 36,000,000 tons in 1870, increased to 71,000,000 in 1880, to 170,000,000 in 1890, and to 240,-

965,917 by the end of the century, passing with the closing years Great Britain's production and establishing our coal fields as the greatest source of supply in the world. The enormous development of our own consumption kept pace with the increase of the product, so that little attention has been turned



American Linotype Machines Used by a Sheffield Daily Newspaper.

toward the export trade. Plans are now in hand, however, which will make the development of that export business the dominating feature of our foreign trade within the next few years, and which promise more powerfully to affect British industry than any other single development that has influenced the trade of the two countries.

The position which we occupy as a source of coal produc-



tion is of such great importance in any discussion of international trade that it is worth while noting some of its significant features. In 1870 the combined coal production of Great Britain, Germany, France, and Belgium, our chief competitors in Europe, was 176,000,000 tons, about six times our own production of 29,000,000. By 1898 the European output had doubled, those countries producing 352,900,000 tons. But in that same time our output had increased 700 per cent. and stood at 218,000,000, or sixty per cent. of the total output of Europe, as compared with six and two-thirds per cent. in 1870. We have five times the coal area of Europe, 50,000 square miles as compared with 11,000 square miles, and we have in addition 200,000 square miles of lignite and other workable fields in reserve. Our bituminous coal lies near the surface, and most of it can be worked by drift mines above the water-level. European mines are frequently 3,000 and sometimes 4,000 feet deep. Our seams of coal average twice the thickness of the coal measures of Europe. The result of these conditions is seen in the increasing cost of European coal and the decline in American mine prices. In 1885 the average price of European mine coal was \$1.62 per ton, and in the United States \$1.58. Our methods were less skilful and the superior advantages of the mines in the United States were not yet manifest. In 1899, however, the mine price of European coal had risen to \$1.96, and in the United States the price had fallen to \$1.10, leaving a margin in our favor which operates, at every stage of production, to lower the manufacturing cost of American exports.

Illustrations of our successful competition might be multiplied into a tiresome catalogue. We have secured practical control of the match-making industry; our tobacco manufacturers have become the dominating influence in the English trade situation; half the newspapers of England are printed on American presses or upon presses built on American models in English shops that are branches of the home manufactories.

Many of those newspapers are printed on American paper. One of the serious obstacles hampering English industries is illustrated in the paper trade. The freight from the New England paper-mills to the London Docks is less than from the



Three American-built Quadruple Presses Used by a Manchester Daily Newspaper

Cardiff mills to the metropolis, and one-half the freight charge on an American shipment is made up of terminal charges incurred in the last twelve miles of the 3,000 mile journey. Probably half the electric-cars in the United Kingdom are driven by American-made motors. When the English postal authorities

entered the telephone field, no English firm could supply the number of instruments wanted, and the contract went to a Chicago company. England is the home of cheap woolens, but our manufacturers of ready-made clothing are developing an important trade there, compensating for the higher cost of their cloth and the larger wages of their workmen by their advantages in specialized labor and superior methods and machines. Our car-builders, who have so specialized the building of freight-cars that the rough timber goes in at one end of the workshop and, almost under the eye of the spectator, comes out at the other end a finished car, found an easy market in competition with old-fashioned methods and hand labor. It is only within a few months that there have been in any English shop machines for boring square holes such as enable our car-manufacturers rapidly to mortise timbers in car construction. The work that is done in an instant with a whirl of flying chips was laboriously bored and chiselled out by hand by the English workers. The same advantage in labor-saving wood-working machines enables us to send finished wood-work, sash and doors, for buildings at prices which cannot be equalled in the English shops.

Instead of enumerating the fields in which we have met with competitive success, it will be more profitable to analyze in some measure the reasons for our strength and for Great Britain's industrial weaknesses. A few weeks ago I was at a dinner in London at which was gathered a group of men representative of British industrial and commercial life. The conversation was on American competition, and at the conclusion of the discussion the views of these men were summed up in a conclusion with which all agreed, and their verdict, I suppose, may be taken in the main as representing the best commercial judgment in Great Britain. All agreed that there is a serious crisis in British industry, and they grouped the main reasons for it under three heads. The first is the attitude of the English workman in his desire, made effective by the power of

trades-unionism, to restrict the output of labor to the lowest possible unit per man; the second is the conservativeness of employers and the hostility of workmen toward the introduction of labor-saving machinery; and the third is “municipal trading,” a phrase which we have not encountered much at home, but which means the activities of municipalities in industrial undertakings, such as the development of systems of transportation and communication, the production of light and heat, in a word the municipal control of the utilities. On this last point there would undoubtedly be found wide differences of opinion among high authorities, and it is not my purpose here to enter into a



An Electric Company's Plant at Manchester, England.

(In course of construction.) Electrical machines of American model are to be built by American methods

discussion of the questions involved in it. In regard to the first two, however, I believe there is pretty unanimous agreement in the minds of trained observers of the conditions of industrial affairs.

The highest development of labor-unions has been in Great Britain. Much of the earlier growth of these organizations was along correct economic lines, resulted in distinct benefit to organized labor, and was undoubtedly helpful to British industries generally. A few years ago there came into existence a new unionism, which meant a unionism of force, a unionism which carried its points by strikes, and made strikes effective by forcible interference with non-union labor. That new unionism has

lately been succeeded by a newer unionism, which has a false economic theory for its foundation, and is, I believe, more than any other single cause, the influence to which can be attributed the present unhappy state of British industry.

British trades-unions embrace nearly 2,000,000 members. The greater part of this army of organized labor has adopted a false economic theory. They hold that there is a given amount of work to be done in Great Britain, and that, if the day's output of the individual worker is decreased, the result will be an increase in the aggregate number of days' labor. They might not all of them state the proposition in just that way, but the irresistible logic of their position carries them to exactly that point. It is a cardinal principle with the members of most of the labor-unions in England to-day that it is desirable for them to produce with each day's work as small an output per man as it is possible to compel employers to accept. They believe that if a man does only half a given amount of work in a day, two men will have to be employed where one was before, or the job will furnish employment for the one for double the length of time. They have the further uneconomic principle of a minimum wage, which is to be paid to all men employed, without regard to the relative value of their labor. Here is how the situation is viewed by high English authority: With the principle of the minimum wage is conjoined the principle that there shall be no maximum wage; that is to say, if any workman shall induce his employer to offer him higher wages than his fellows, they at once demand that the same increased wages shall be paid to all of them alike. If the master seeks refuge in improved machinery, the principles of limitation of output and minimum wage are still enforced. The machine must not be allowed to do all it can, any more than the men; nor may it have an attendant, however simple his duties, at any lower rate of wages than that fixed for the skilled artisan who did the work before the machine was introduced. The machine, in short, must not increase output or displace labor. It is broadly argued that men will

work their best if it is made worth their while, and not otherwise, but the unions say it shall not be made worth their while. It is not worth the while of a bad workman to do better because his minimum wage is secure. It is not worth the while of the good workman to put forth his strength or skill, because he incurs odium among his class and cannot get increased wages in return.

It hardly seems credible that the great mass of organized labor in England should be so blind to plain economic truths as



An American-built Crane at Micheville, France.

Arranged for handling long beams and shapes in stock-yard. Capacity 5,000 kilos.

to believe that their country can maintain its commanding position in the world's competitive markets when labor uses its keenest ingenuity and best endeavors to devise ways to restrict individual production. Instances can be produced indefinitely to support the assertion that such is their belief. Such instances will show quotations from the rules of the organizations which are devised to restrict labor and discourage energetic workmen. There are many examples of direct official discipline of members who have shown a tendency to turn out more work in a day than the minimum which employers can be forced to accept. I have

heard of many cases where men of ambition and energy who found it difficult to adapt themselves to the easy-going pace which the union prescribes, got very much the worst of it in the contest which always follows a period of active work. Men who start in to turn out a full day's work are frequently directly disciplined by their unions; but if it does not reach that point, they are at least at once put under a social boycott. They are called "sweaters" and "master's men," and much ingenuity goes into the devising of ways and means to make their lives miserable and their positions untenable.

Some of the notable illustrations of the spirit of curtailment of production are found in the building trades. Bricklayers in London, for instance, do not average over 400 bricks a day; those employed by the London County Council on public work lay materially less. When it is understood that an active man can readily lay 1,000 bricks a day, and from that up to 1,600, it will be seen what a disastrous grip this "go-easy" policy has. We have made, with our exportations running into millions of dollars, great inroads on the English boot and shoe industry. Some of that success can be accounted for by superior machinery and better organization and division of labor, but it is not surprising to find in this, as in a good many other fields where we have made pronounced competitive progress, that there is a clear understanding in the trades-unions controlling the manufacture of boots and shoes that a man's day's work shall be limited to a certain quantity, and that, should he do more, his life will be made intolerable. The delusion which the English workman has harbored, that there was a certain amount of work to be done in that industry, and that if everyone tried to do as much as he could there would not be work enough to go around, has led him to the natural result of such a fallacy. Chicago factories, usually paying wages from two to three times as high as are ruling in the English factories, are sending enormous exports into the

English field. Those exports two years ago were a little over \$500,000; a year ago they passed the million, and last year they were well on toward \$2,000,000.

Both English builders and workmen are having a most valuable object-lesson in the construction of the great manufacturing plant of the British Westinghouse Company. This company is building a \$5,000,000 plant at Manchester, in which electrical machines of American model are to be built by American methods. One of the finest mechanical plants in the world is being installed, and the manner in which the building operations have been pushed forward have been the marvel of both English builders and workmen. The plant was started under English supervision, but the work dragged along in such hopeless fashion that the task of completing it was, last April, put into the hands of American building contractors. They spent \$3,000,000 in eight months, and managed, though under great difficulty, to show a rapidity of construction such as England had probably in all her history never before seen. These contractors met with the same spirit among the English bricklayers that is to be found everywhere. With all their energy they could not get them up above 800 bricks a day, so they imported some American bricklayers and set them at work on the slowly rising walls. They laid nearly 2,000 bricks a day. The pride of the English workmen was at stake, and they abandoned their “go-easy” principles, took off their coats, and demonstrated that they were as good bricklayers as the imported Americans, but how they will reconcile the record that they made under the eyes of the St. Louis contractors with what they are willing to do under English superintendence is a little difficult to say.

In the coal-mining industry this fallacious policy of trades-unionism takes the form of “stop days,” when all the miners stop work without respect to the views of the mine-owners because they believe that by so doing they will restrict production, hold

up prices, and so keep up their own wages, which are regulated by a sliding scale based on the price of coal. Their economics have not been broad enough to grasp the prospect of American competition, but their methods are hastening its success.



A Shovel-bucket in Use at the American-built Storage and Rehandling Plant at Mariupol, Russia.

Since the great machinists' strike of a few years ago conditions in that trade are somewhat better than before that dispute, which ended so disastrously for organized labor. There are still many restrictions imposed upon manufacturers which prevent them from securing anything like the best results from machinery which they introduce. Throughout the mechanical trades the

same false notion that the less work a man does in a day the more he leaves to be done by himself or his fellows is particularly aimed against labor-saving machinery, and every rule the unions can devise to restrict the output of machinery and increase the labor cost is considered by the unions their material gain.

The second serious embarrassment in which British industries are involved is the difficulty surrounding the introduction of modern labor-saving machines and mechanical methods. In the way of that improvement is the double obstacle of the conservatism of employers and the opposition of the men. Everyone who has studied the English industrial situation will agree unreservedly that labor-saving machinery must be extensively introduced, that the manufacturing plants must be put on mechanical equality with those of America and Germany, before the English manufacturers can hope again to produce at as low a unit of labor-cost as is done in the two competing countries.

Conservatism is a corner-stone of the English character, and it seems particularly pronounced in some of the families which have hereditarily been in control of manufacturing industries. A machine which did satisfactory service for a man's father and grandfather comes to be regarded with a certain veneration. With us there is no recommendation better than that a machine or method is new. To speak to a manufacturer of a new machine or a new process interests him at once. His mind is open to investigate any improvement that is suggested, and, what is still more important, he has the courage when the value of the improvement is demonstrated, to throw on to the scrap-heap machinery that may have cost him much, and to replace it with machinery which will accomplish more.

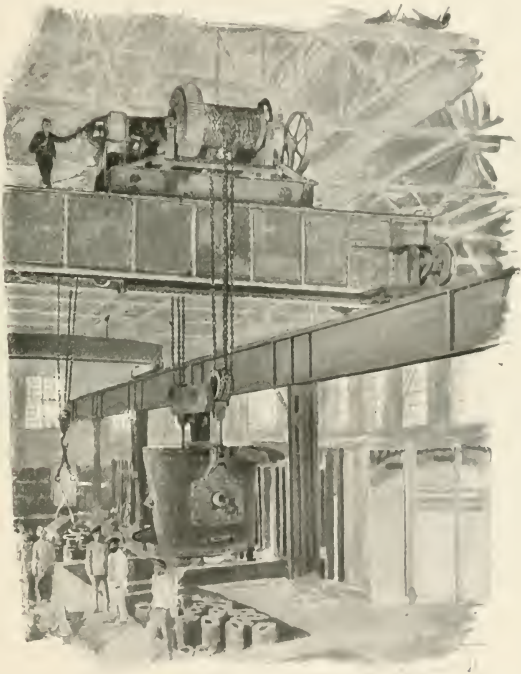
The mind of the English manufacturer does not work along these lines. As a rule he has a deep-seated prejudice against a thing that is new; it is not easy to win him over to an examination of a new machine or method, and it is always difficult to induce him to throw on to the scrap-heap machines which have for years done him good and profitable service.

The characteristics of conservatism that made the English business man for years combat the introduction of the typewriter, the conservatism which to-day will not permit a telephone within the sacred precincts of the Bank of England, has in its operation in the industrial field cost England dear.

Only the smaller part of the difficulty is over when the manufacturer has grasped the necessity for introducing a machine. His workmen are more prejudiced than he against mechanical innovations. They may have seen many examples of machines which, though first taking away the necessity for hand labor, in the end create far more opportunity for labor than at first existed, but those examples have failed to impress them. It is only with the greatest difficulty that labor-saving machines, absolutely essential to the continuance of manufacturing establishments in a position to meet international competition, can be put into operation in the English workshops. Men sometimes refuse altogether to operate machines. The unions enforce restrictions in regard to the number of automatic machines that one workman will be permitted to attend. They go on strike because non-union labor is put at work, and they hamper and embarrass in a hundred ways the manufacturer who wishes to provide modern equipment.

All that looks unreasonable at first, but the antagonistic attitude of English workingmen toward labor-saving machinery can be better understood when some of the other restrictions of English labor organizations are comprehended. Each trades-union, believing there is a definite amount of work to do, and hoping to confine all of it of a particular character to its own members, has hedged about entrance into each trade with the greatest of difficulties. The result is that there is in England the least possible mobility of labor. A man, having learned one trade, finds it almost impossible to draw out of that and enter another. There are minute restrictions regarding apprentices, and the rules provide fines and disciplines for any member who teaches an outsider or permits him to use tools or in any way aids

him in learning the rudiments of a trade. When this is understood it will be seen that the position of an English workman, if his place be menaced by the introduction of labor-saving machinery which might force him to seek employment in some other trade, is a serious one.



Steel Ladle Crane in a Foundry, Mariupol, Russia.

Used for carrying the molten metal from the steel furnaces to the moulds. Capacity fifty tons.

Conditions as they have been evolved under the rule of the walking delegate and of labor leaders with the shallowest notions of economics are the despair of Englishmen who hope to see their country win back a lost industrial position. Those condi-

tions are most profitable subjects for study by us. We have the beginnings of just the sort of unionism which, in its full development, has brought distressing results on England. There cannot be found in Great Britain any more absurd regulations restricting the output of labor than were in force in the building trades in Chicago for two years, ending in paralyzing the building industry there. We have already grown accustomed to the strike which has for its object, not an increase of wages or a reduction of hours, but the imposition of restrictive regulations which would result in a decreased product. So long as our industries can go forward receiving the generous co-operation of labor which is still the rule, we will have an advantage over the countries of Europe in spite of a wage scale more than double theirs, but that advantage will be menaced if the false conceptions which now rule most of the English labor organizations are ever generally adopted by our own workers.

When we turn to the statistics of trade between the United States and France, we find a condition in sharp contrast to that shown by the English trade returns. France has hardly heard of the American invasion. Her sales last year stood at almost the same point that they did ten years ago. Our sales to France during the same period have shown some increase, but taking the record of last year and comparing it with ten years ago the increase is but \$18,000,000, while we remember that our annual sales to England increased in the last half-dozen years \$244,000,000. France has done everything she can with a high protective tariff to make competition difficult to foreign manufacturers. She has done even more than that, with legislation which has in some instances made foreign competition impossible without any regard to price. The franchises which have recently been granted to many electric railways have provided that all material for their construction and equipment must originate and be manufactured in France.

The exports of France are in the main of a kind that is not affected by the underbidding of foreign makers. French deft-

ness, that artistic touch which the workers of few other nations can equal, gives a permanence to her hold on those foreign markets in which she is interested which has been little affected by those industrial developments that have made such profound impression upon the trade relations among England, Germany, and the United States. In ponderous lines of manufacturing



An American Steam Shovel at Work on the Moscow, Jaroslav & Archangelsk Railway between Vologda and Archangelsk, Russia.

we have reached unquestioned superiority over France, but the same sort of skill which, in the fingers of the Parisian working-women produces articles of unapproachable attractiveness, develops in the hands of the mechanic into a deftness which rivals the ingenuity of our best workmen, and leaves us without the advantage in the French market that we have in most of the other markets of the world.

Russia is another country which, in spite of its enormous extent, its important position in the world's politics, and the traditionally friendly relations between its peoples and our own, has been little affected by the "American invasion." With territory covering an eighth of the globe, and a population of 130,000,000, the trade between this greatest of political units and our own country is still comparatively insignificant, and has in the last decade shown no remarkable changes. Our exports have shown no significant increase. Russia is a country of high tariff, and the tendency is toward greater protective restrictions about her domestic industries. That policy has resulted in a number of American manufacturers building important plants within the empire, but it has effectually prevented any remarkable development in our grasp of the Russian markets.

I asked M. de Witte, the Russian Finance Minister, how in his opinion commercial relations between the United States and Russia could be improved.

"Practically, there is nothing that can be done," he said. "Theoretically, there are unlimited possibilities. If you only had a government that could do things as our government can, a combination of the two countries would bring Europe to our feet. We could absolutely control the markets of the world for meat, bread, and light. I understand, of course, that that is impossible—impossible from your side. We could do it, but you, with your government, which must always listen to the people and shape its course for political reasons, could not."

It is possible that the unattainableness of political unity of action which the distinguished Russian deprecated may in effect be in some measure worked out by the combinations—the industrial trusts—which have such great influence in various fields and which are able to project into the commercial battle such effective unified efforts. European economists and industrial leaders are undoubtedly more alarmed over the advantages which they see we are attaining by the aid of these great organizations than over any other point in our position.

I have attempted in these articles to outline some of the weaknesses of our foreign competitors and some of the corresponding points of strength that have developed in our own industries. The list of our advantages is an imposing one, but we cannot expect that all of them will be maintained. Our competitors are by no means blind or without energy or ability. The superiority of our labor, our larger use of machinery, our low taxation and small military burden, the homogeneity of our people and the great breadth of the domestic field of consumption, our comparative freedom from militant trades-unionism, the omnipotence with us of the industrial ideal, our freedom from a caste which in other countries prevents the best brain and the most highly trained intellect from engaging in industrial enterprise—all these are advantages which, so long as they hold good, make a broad foundation upon which to rest an industrial development of commanding importance. But unless the United States has some more permanent and fundamental advantage, I should lack the absolute faith which I now have in our development to a lasting commercial supremacy. No small part of our great exports in the last few years has been made up of labor-saving machines, which have at once been turned against us as guns captured from an enemy. From all over Europe deputations of technical experts are journeying to the United States and taking abundant advantage of our good-nature and hospitality. They praise our machines and make drawings of them; they satisfy our pride with appreciations of our methods and they make copious notes. The result is beginning to be seen in almost every workshop of Europe.

There can be no American monopoly of ideas. Civilization gives no patent on technical supremacy. America may lead the world now in her ingenious application of labor-saving machinery, but there can be no assurance of the permanent continuance of that advantage. Nor can assurance be given that American industrial society will always remain as mobile and as energetic as it is at present. We have already seen trades-unions attempt-



Drawn by Otto H. Bacher from a photograph.

The Opening of an American-equipped Electric Line in Glasgow.

ing to force employers to make work rather than to produce wealth. We have seen strikes that have had for their basis only a desire for an increased power of interference, and from that it is not a long step to a position where union labor may be found struggling to restrict individual production. Strikes of that character have so far been successfully combated, but whatever there is left of the spirit that animated them remains a menace to American prosperity.

In our national conception of the dignity of work we have an enormous advantage, but that also may be in danger. Thus far industrial rewards have been made pretty strictly on a merit basis. There have been few sons and nephews of rich families to be taken care of. The future generation can hardly be so free from nepotism in industrial promotion. With the increase of wealth we have already the beginning of a leisure class, and it is not certain that industrial and commercial life can continue to command the full service of the best brain and energy that we have. Our military burdens may increase if we measure up to the full extent of our responsibilities as a world-power. Tariff walls may be built against us.

On all these points of present superiority we can have but small assurance of a lasting industrial supremacy, but I feel that a more fundamental reason for belief in such supremacy can be advanced, one which will warrant the conclusion that America must inevitably lead the world in the twentieth-century commercial struggle.

Of all nations the United States has the most unbounded wealth of natural resources. We have hardly comprehended the inevitable advantages which those resources are to give us.

Man's labor the world over is steadily decreasing in importance. It is the age of machinery. The forces of nature are to do man's work. All the world over the cost of production has fallen. The relative importance of labor in the cost of production is lessening; the sway of machinery is increasing. The twentieth century will be the century of machinery. Before

it is half completed we may expect to see that sort of human labor that is the painful and laborious exercise of muscle almost supplanted by automatic machinery directed by trained intelligence. Such development of machine production steadily increases the importance of raw material in the productive process. As the proportion of labor cost decreases, the cost of the raw material forms a larger part of the value of the finished product.

The hand-weaver took a pound of cotton and spent a week in its manipulation. The cloth had to reimburse not only the cost of the pound of cotton, but six days of toil. Machinery was introduced into the industry, a week became an hour, and a hundred yards took the place of one. The price of each yard then had to pay the merest fraction of the cost of the labor which watched the looms. The proportion which the cost of the raw material bore to the cost of the finished product enormously increased. So under these modern conditions of manufacturing industry, where machinery enters more and more into the manipulation, and the cost of labor forms a constantly decreasing relation to the whole, raw material comes to play a more and more important part. When machinery has fully entered into production, the cost of the crude products makes up the major part of the cost of the finished article. We can in a measure reduce the cost of raw material by improved methods in production and in transportation. The steam hoist and electric drill in the mine, the steam harvester and the steam plough on the farm, the mogul engine and the fifty-ton car, fast steamships of huge tonnage, have all greatly reduced the price of raw material. But no matter how strong the appeal, Mother Nature yields a slow and grudging consent to the efforts of her children to relax her grip. Man's success in cheapening raw material must always fall short of achievements in the realm of manufacture.

Since the cost of material is an increasing part of the price of the product, those producers who can draw upon practically inexhaustible and rich supplies near at hand, who are not obliged

to work poor ores and poor lands, or to transport materials great distances—the producers and the nation with those blessings are at tremendous advantage when compared with others whose supplies of material are less rich and less advantageously located.

The age of machinery is also the age of motive power, which is but another way of saying that it is the age of coal. The nation which has the cheapest raw material and the cheapest coal has a permanent and predominant advantage in the world's markets, and it is an advantage which every improvement in method of manufacture will only serve to emphasize.

When so much is admitted, the conclusion immediately follows that America's industrial future is secured. The United States has the most abundant and the cheapest raw materials and supplies of fuel in the world. Germans and Englishmen may dispute with us over relative advantages in methods, in machinery, in labor, in business organization, and in commercial practice. They may claim that they have much to teach us and that they can soon learn what we have to teach them. American labor may contract the disease of trades-unionism, and American public burdens and social-caste developments may lessen our advantage. But American soil and minerals are eternal, and the resources of no other great power are for one moment to be compared with them.



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